

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF HEALTH AND HUMAN SERVICES
DEPARTMENT OF PUBLIC HEALTH

Argeo Paul Cellucci, Governor
Jane Swift, Lieutenant Governor
William D. O'Leary, Secretary, Health and Human Services
Howard K. Koh, MD, MPH, Commissioner, Public Health

SELECTED CANCERS
IN
MASSACHUSETTS MEN
1982 - 1996

Susan T. Gershman, MPH, PhD, CTR, and Laurie A. MacDougall, MS
Bureau of Health Statistics, Research and Evaluation

Martha Crosier Wood, MBA
Bureau of Family and Community Health

Massachusetts Department of Public Health
250 Washington Street
Boston, MA 02108 - 4619

MARCH 2000

ACKNOWLEDGMENTS

Our thanks to the Colorado Central Cancer Registry, whose report “Cancer in Colorado Women” inspired the development of this report. Also, thanks to the following persons for reviewing components of this document for accuracy and readability: Cynthia Boddie-Willis, MD, MPH, Richard Clapp, ScD, Graham Colditz, DrPH, Greg Connolly, DMD, Letitia Davis, ScD, Catherine DuBeau, MD, Richard Fabian, MD, Marc Garnick, MD, Alan Geller, RN, MPH, Lauren Holm, RN, MSN, David Hunter, MB, BS, ScD, Joe Jacobson, MD, Phil Kantoff, MD, Howard Koh, MD, MPH, Robert Krane, MD, Frederick Li, MD, John Lisco, MPH, Robert Mayer, MD, Michael Monopoli, DMD, Nancy Mueller, ScD, J. David Naparstek, ScM, CHO, James Petros, MD, Marianne Prout, MD, MPH, Lowell Schnipper, MD, Paul Schroy, MD, William Shipley, MD, Art Skarin, MD, Arthur Sober, MD, and staff of the Massachusetts Department of Public Health’s Bureau of Environmental Health Assessment, Colorectal Cancer Working Group and Skin Cancer Prevention Program.

Special thanks go to the following for their assistance in the preparation of this report: Dr. Robert Danley, Regina Kenney, Ann MacMillan, Mary Mroszczyk, CTR and David Rousseau of the Massachusetts Cancer Registry, and Paulette DiMartino of Administration. All of the above individuals are staff of the Bureau of Health Statistics, Research and Evaluation. Special thanks also go to Daniel J. Friedman, PhD, Assistant Commissioner, Bureau of Health Statistics, Research and Evaluation, and Deborah Klein Walker, EdD, Assistant Commissioner, Bureau of Family and Community Health. The authors also wish to thank the MDPH peer reviewers who provided helpful comments and critiques. Also, the contributions of the staff in approximately 100 reporting hospitals are gratefully acknowledged. Finally, we would like to acknowledge the work of Janine Cory, MPH and Ruth Palombo, MS, RD, both former staff of the Bureau of Family and Community Health, in developing the Massachusetts Department of Public Health’s previous report on cancer in Massachusetts women, which served as a foundation for this report.

TABLE OF CONTENTS

Introduction	1
Summary Data	5
Bladder Cancer.....	7
Colorectal Cancer.....	13
Lung Cancer	21
Melanoma.....	28
Non-Hodgkin's Lymphoma.....	35
Oral and Pharyngeal Cancer.....	41
Prostate Cancer	47
Testicular Cancer	55
Resources	61
Suggested Readings and References	67
Statistical Definitions.....	70

LIST OF FIGURES

1.	Cancer Incidence in Massachusetts Males, 1982-1996	5
2.	Cancer Mortality in Massachusetts Males, 1982-1996	6
3.	Male Bladder Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996	9
4.	Rate of Bladder Cancer by Age Group, Massachusetts Males, 1992-1996	10
5.	Male Bladder Cancer Mortality Trends for Massachusetts and United States, 1982-1996.....	12
6.	Male Colorectal Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996	17
7.	Rate of Colorectal Cancer by Age Group, Massachusetts Males, 1992-1996.....	18
8.	Male Colorectal Cancer Mortality Trends for Massachusetts and United States, 1982-1996.....	20
9.	Male Lung Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996	24
10.	Rate of Lung Cancer by Age Group, Massachusetts Males, 1992-1996	25
11.	Male Lung Cancer Mortality Trends for Massachusetts and United States, 1982-1996.....	27
12.	Male Melanoma Incidence Trends for Massachusetts and SEER Areas, 1982-1996	31
13.	Rate of Melanoma by Age Group, Massachusetts Males, 1992-1996.....	32
14.	Male Melanoma Mortality Trends for Massachusetts and United States, 1982-1996.....	34
15.	Male Non-Hodgkin's Lymphoma Incidence Trends for Massachusetts and SEER Areas, 1982-1996	37
16.	Rate of Non-Hodgkin's Lymphoma by Age Group, Massachusetts Males, 1992-1996	38
17.	Male Non-Hodgkin's Lymphoma Mortality Trends for Massachusetts and United States, 1982-1996.....	40

18.	Male Oral and Pharyngeal Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996	43
19.	Rate of Oral and Pharyngeal Cancer by Age Group, Massachusetts Males, 1992-1996	44
20.	Male Oral and Pharyngeal Cancer Mortality Trends for Massachusetts and United States, 1982-1996.....	46
21.	Prostate Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996	50
22.	Rate of Prostate Cancer by Age Group, Massachusetts Males, 1992-1996	51
23.	Prostate Cancer Mortality Trends for Massachusetts and United States, 1982-1996.....	54
24.	Testicular Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996	57
25.	Rate of Testicular Cancer by Age Group, Massachusetts Males, 1992-1996	58
26.	Testicular Cancer Mortality Trends for Massachusetts and United States, 1982-1996.....	60

LIST OF TABLES

1.	Cancer Incidence in Massachusetts Males, 1982-1996	5
2.	Cancer Mortality in Massachusetts Males, 1982-1996	6
3.	Bladder Cancer Stage at Diagnosis, Massachusetts Males, 1985, 1990 and 1995.....	10
4.	Bladder Cancer 5-Year Relative Survival Rates, Males, United States, 1989-1995	11
5.	Colorectal Cancer Stage at Diagnosis, Massachusetts Males, 1985, 1990 and 1995.....	18
6.	Colorectal Cancer 5-Year Relative Survival Rates, Males, United States, 1989-1995	19

7.	Lung Cancer Stage at Diagnosis, Massachusetts Males, 1985, 1990 and 1995.....	25
8.	Lung Cancer 5-Year Relative Survival Rates, Males, United States, 1989-1995	26
9.	Melanoma Stage at Diagnosis, Massachusetts Males, 1985, 1990 and 1995.....	32
10.	Melanoma 5-Year Relative Survival Rates, Males, United States, 1989-1995	33
11.	Non-Hodgkin's Lymphoma 5-Year Relative Survival Rates, Males, United States, 1989-1995.....	39
12.	Oral and Pharyngeal Cancer Stage at Diagnosis, Massachusetts Males, 1985, 1990 and 1995.....	44
13.	Oral and Pharyngeal Cancer 5-Year Relative Survival Rates, Males, United States, 1989-1995.....	45
14.	Prostate Cancer Stage at Diagnosis, Massachusetts Males, 1985, 1990 and 1995.....	51
15.	Prostate Cancer 5-Year Relative Survival Rates, Males, United States, 1989-1995.....	53
16.	Testicular Cancer Stage at Diagnosis, Massachusetts Males, 1985, 1990 and 1995.....	58
17.	Testicular Cancer 5-Year Relative Survival Rates, Males, United States, 1989-1995.....	59

INTRODUCTION

“Cancer in Massachusetts Men” is a report from the Massachusetts Department of Public Health which provides information about some of the more common cancers that are diagnosed among men in Massachusetts. While the idea of cancer can be frightening, survival rates from cancer are better than ever. Learning about your risks and how to reduce them, and understanding how some cancers can be detected early, are the best ways to protect yourself.

Before you learn about specific types of cancer, you may want some basic information:

- Cancer is a general name for more than 100 different diseases in which abnormal cells grow out of control. Cancer cells may grow faster than normal cells and spread through the body, destroying healthy parts of the body.
- No one can predict who will get cancer and who won't. Some cancers run in families (these cancers are also called *genetic* or *inherited*), and some cancers develop as a result of specific activities or behaviors, like smoking, being physically inactive or having a poor diet. In some cases, occupational or environmental exposures may also play a role.
- There are things you can do to improve your chances of **not** getting cancer. These include:
 - not smoking,
 - using sun protection methods, such as protective clothing and sunscreen,
 - eating a healthy diet, and
 - getting adequate physical activity.

This doesn't guarantee that you won't get any type of cancer, but it reduces your *risk* (your chance of developing cancer). In this report, you will also learn about other things that may increase your chances of developing cancer (*risk factors*), and ways to reduce your risk of some types of cancer. However, while risks can be reduced, sometimes there is nothing we can do to prevent many types of cancer.

- There are also tests (called *screening* or *early detection methods*) that can find cancer early. In many cases, people whose cancers are found early can be more easily treated, their cancers are less likely to return, and they will survive longer. Some early detection tests include the PSA (prostate-specific antigen) blood test for prostate cancer and the stool blood test for colorectal cancer. This report will tell you why, how, and when to get these tests.

How this report is organized:

This report first contains an overall look at the impact of cancer on men in Massachusetts. Next, eight specific cancers are reviewed: bladder, colorectal, lung, melanoma, non-Hodgkin's lymphoma, oral, prostate and testicular. These cancers were selected because they are the most common cancers in men, because they occur only in men, or because they occur more frequently in men than in women. Statistics on these cancers, including how many men are diagnosed with that type of cancer (**incidence**) and how many men die of it (**mortality**) are provided. For each of these cancers, information is included on:

- **Risk factors** -- things that can increase your chances of developing that cancer.
- **Prevention** -- what you can do to help reduce your chance of developing that cancer.
- **Screening** -- tests that are given routinely at certain times or ages to people with no symptoms of disease. Screening can identify potential disease very early, when treatment is most successful. (Note: There are many cancers for which there is no screening test.)
- **Symptoms** -- an indication that something may be wrong. Having one or more of these warning signs doesn't necessarily mean you have cancer, but you should see your health care provider for an exam and/or tests.
- **Detection** -- the tests and exams a health care provider uses to decide whether or not a person has cancer.
- **Treatment** -- medicines or procedures (for example, surgery) that a health care provider can use to remove or reduce the size of a cancer.

The last section of the report contains further information on how you can learn more about these cancers, including a resource list and patient education materials. There is also a statistical definitions section, which contains explanations of the statistical terms used in this report.

Definitions and key words:

How can you use these reports and charts in a way that makes sense?

Here are some definitions and key words to look for:

- **Incidence:** the number of new cases of a type of cancer reported over a given period of time.
- **Mortality:** the number of deaths from a type of cancer.

Incidence and mortality data are given in several ways. First, we can look at the actual **number** of people who have been diagnosed with or have died of a type of cancer. We can then look at **percentages** -- what proportion of all cancers diagnosed in men were prostate cancers, for example. Finally, we can look at incidence and mortality **rates**, which tell us how many people were diagnosed with or died of a type of cancer in a given size population over a given period of time. (The population usually used is "per 100,000"; here, rates are given "per 100,000 males".)

Two types of rates are used in this report:

- **Age-adjusted rates** are overall rates which take into account how old someone was when he was diagnosed with, or died of, a type of cancer. We can compare age-adjusted rates for different types of cancers to see which cancers have the highest rates, and we can compare age-adjusted rates for the same cancer over time to see how the rate may have changed.
- **Age-specific rates** look at the number of people who have been diagnosed with, or have died of, a type of cancer in a particular age group. This allows us to examine how the rate of cancer may change with age.

Some cancer-related terms to know are:

- **Origin or primary site:** the organ or part of the body where a cancer starts.
- **Invasive:** a cancer which has spread beyond the layer of cells where it started into the tissue around it, and which has the potential to spread to other parts of the body.
- **Metastatic:** a cancer which has spread from the site where it started to other, distant parts of the body, such as the bone or the liver.
- **Staging** describes how far along a cancer has developed. This is important to know, because treatment will vary depending on the stage at which the cancer is diagnosed. **Treatment is usually more successful when cancers are found early.** This is why screening and early detection tests greatly improve a person's chances of surviving cancer.

Cancer stages are:

In situ: the earliest stage of cancer, before the cancer has spread, when it is limited to a small number of cells and has not invaded the organ itself.

Localized: the cancer is found only in the body part (organ) where it began and hasn't spread to any other parts.

Regional: the cancer has spread beyond the original point where it started into the nearest surrounding parts of the body (other tissues).

Distant: the cancer has spread to parts of the body far away from the original point where it began. This is the most difficult stage to treat, since the cancer has spread through the body.

Unstaged: there is not enough information about the cancer to assign a stage.

More information is given in the Statistical Definitions section at the end of this book (pages 70-71).

Data sources used in this report:

The Massachusetts Cancer Registry (MCR):

All Massachusetts incidence and staging data are provided by the Massachusetts Cancer Registry, which is part of the Massachusetts Department of Public Health (MDPH). The MCR collects reports of all cancer cases newly diagnosed in Massachusetts residents (except for skin cancers other than melanoma), and summarizes cancer incidence in its annual report. The most recent year of Massachusetts cancer incidence data available at the time this report was prepared was 1996.

It is important to note that during the time period covered by this report (1982 through 1996), only Massachusetts hospitals reported newly diagnosed cases of cancer to the MCR. Some types of cancer in this report may be under-reported because they are diagnosed by private physicians, private laboratories, health maintenance organizations or radiotherapy centers that escape the case identification systems used by hospitals. Particular examples include melanoma and prostate cancer. The extent of this under-reporting has not been determined exactly, but cases included in this report represent the great majority of cases statewide and provide an essential basis for observing statewide cancer incidence patterns.

The Massachusetts Cancer Registry began collecting information on *in situ* cancers in 1992. In accordance with national standards, however, *in situ* cancers are not included in calculations of incidence rates. They are also not included when calculating the distribution of stage at diagnosis, so that these distributions can be directly compared over time.

The Registry of Vital Records and Statistics:

Massachusetts cancer death data are obtained from the MDPH Registry of Vital Records and Statistics, which has legal responsibility for collecting and reporting deaths of Massachusetts residents. All Massachusetts cities and towns are required to report resident deaths to the Registry. The most recent year of Massachusetts cancer mortality data available at the time this report was prepared was 1996.

Surveillance, Epidemiology and End Results (SEER):

National data on cancer incidence, mortality, staging and survival are from the National Cancer Institute's SEER Program. The SEER Program is the best source of information on national cancer incidence. It currently includes data from population-based cancer registries in 9 states and geographic areas, covering approximately 14% of the United States population. SEER also publishes national mortality data from the National Center for Health Statistics. The most recent year of SEER data available at the time this report was prepared was 1995. It is important to note that SEER race-specific data are only available for white and black men, and not for men of other races or of Hispanic origin.

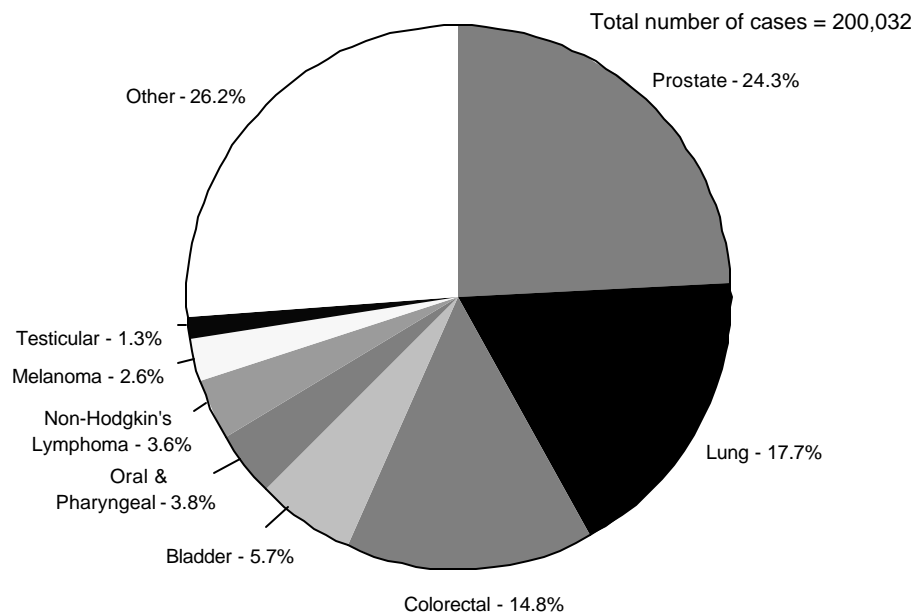
SUMMARY DATA

INCIDENCE

Between 1982 and 1996, a total of 200,032 men in Massachusetts were diagnosed with new cancers. (This number excludes skin cancers other than melanoma, which are not reportable to the Massachusetts Cancer Registry.) Prostate cancer was the leading type of cancer diagnosed during this period, accounting for 24.3% of all cancers diagnosed in men. In descending order, the next most common cancers diagnosed were lung, colorectal and bladder cancers. Oral and pharyngeal cancer, non-Hodgkin's lymphoma, melanoma and testicular cancer each represented fewer than 5% of new cancer diagnoses.

Table 1. Cancer Incidence in Massachusetts Males 1982-1996		
Type of Cancer:	Number of New Cases	Percentage of New Cases
Prostate	48,565	24.3 %
Lung	35,332	17.7 %
Colorectal	29,593	14.8 %
Bladder	11,415	5.7 %
Oral & Pharyngeal	7,592	3.8 %
Non-Hodgkin's Lymphoma	7,259	3.6 %
Melanoma	5,283	2.6 %
Testicular	2,586	1.3 %
Other	52,407	26.2 %
Total	200,032	100.0 %

**Figure 1. Cancer Incidence in Massachusetts Males
1982-1996**

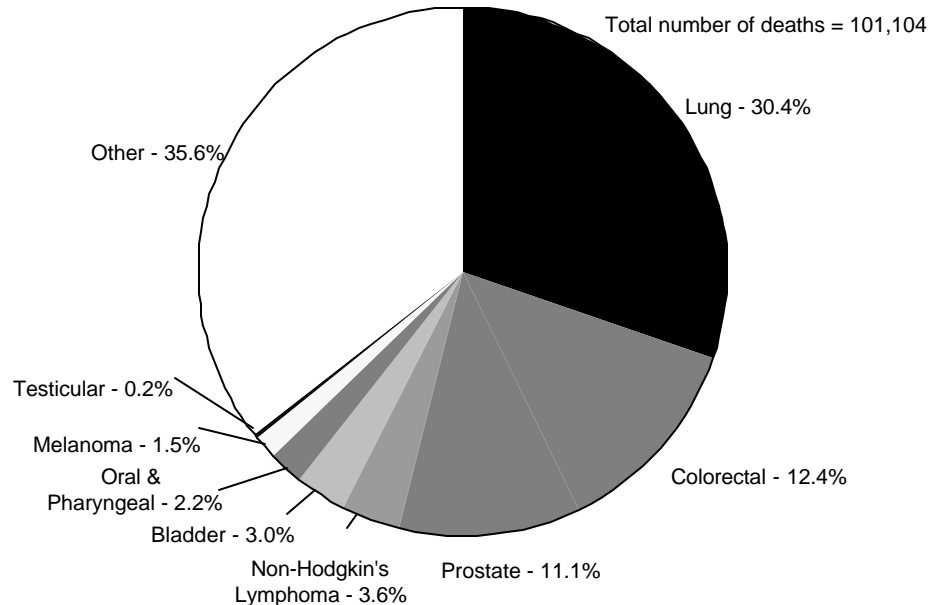


MORTALITY

Between 1982 and 1996, a total of 101,104 Massachusetts men died of cancer. Lung cancer was the leading cause of cancer deaths in men during this period. It was responsible for 30.4% of cancer deaths in men, well ahead of colorectal cancer (the second-leading cause of cancer deaths in men). Although prostate cancer was the most commonly diagnosed cancer, it ranked third in mortality.

Table 2. Cancer Mortality in Massachusetts Males 1982-1996		
Type of Cancer:	Number of Deaths	Percentage of Deaths
Lung	30,709	30.4 %
Colorectal	12,554	12.4 %
Prostate	11,216	11.1 %
Non-Hodgkin's Lymphoma	3,648	3.6 %
Bladder	3,000	3.0 %
Oral & Pharyngeal	2,219	2.2 %
Melanoma	1,571	1.5 %
Testicular	163	0.2 %
Other	36,024	35.6 %
Total	101,104	100.0 %

**Figure 2. Cancer Mortality in Massachusetts Males
1982-1996**



BLADDER CANCER

RISK FACTORS

Bladder Cancer Risk Factors:

- Age (In Massachusetts men, incidence rates increase steadily beginning at age 50, and are highest in the 80 year and older age group.)
- Cigarette smoking
- Excessive use of certain pain medications such as those containing phenacetin
- Treatment with alkylating agent chemotherapy drugs such as Cytosan (cyclophosphamide)
- Having had radiation therapy to the bladder

Possible Risk Factors:

- Occupations in which workers are suspected of having an elevated bladder cancer risk due to certain chemical exposures include working in the rubber and/or leather industries, dye manufacturing, painters, professional drivers of trucks and other motor vehicles, aluminum workers, machinists, chemical workers, printers, metal workers, hairdressers and textile workers.
- Urologic conditions such as urinary tract infections and urinary stasis (stagnation of urine in the bladder)
- Dietary factors

PREVENTION

To Reduce the Risk of Bladder Cancer:

- Don't smoke -- and if you do smoke, quit.
- Minimize occupational exposure to aromatic amines and other chemicals.
- Eat a healthy diet.

SCREENING

No test has been validated for screening purposes, although there are methods of detecting bladder cancer at an early stage.

SYMPTOMS

Common Warning Signs of Bladder Cancer Include:

- Blood in the urine
- Painful urination
- Urgent need to urinate
- Increase in number of times of urination each day

DETECTION

Ways to Detect Bladder Cancer Include:

- Urinalysis for blood in the urine
- Intravenous pyelogram (IVP) imaging
- Cystoscopy (passing a small tube through the urethra into the bladder for visualization and biopsy)
- Biopsy

INCIDENCE

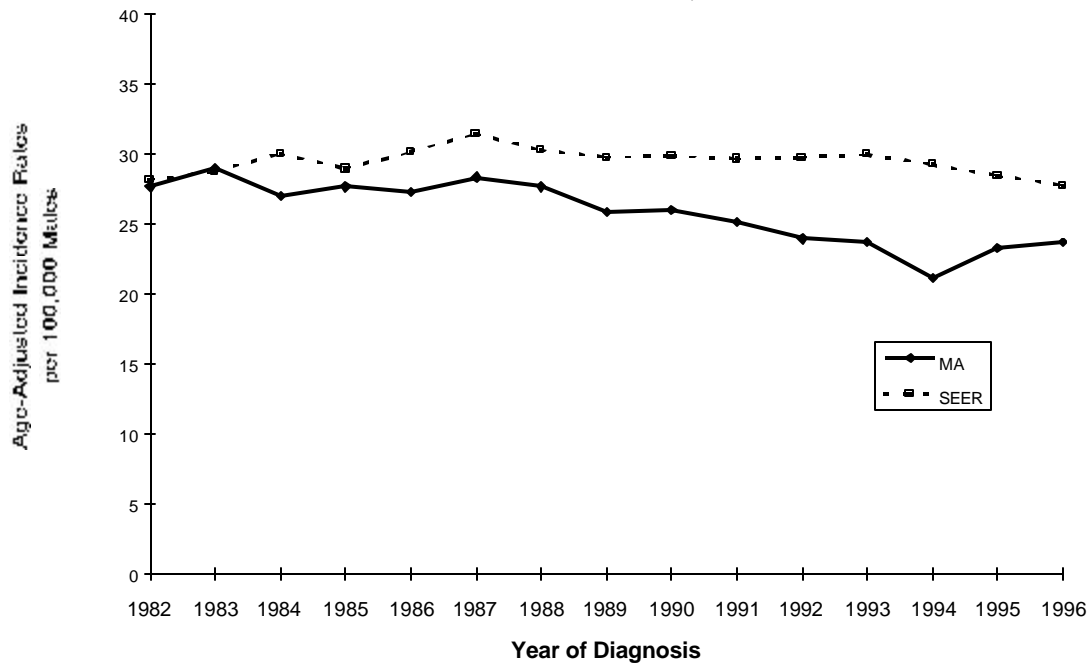
Based on national data, the average man has approximately a 3.4% risk of developing invasive bladder cancer over his life, or about a one in 30 chance. The risk of bladder cancer is higher in white males (3.7%, or 1 in 27) than in black males (1.2%, or 1 in 85).

In Massachusetts, 11,415 new cases of bladder cancer were reported in men between 1982 and 1996. During this period, bladder cancer accounted for 5.7% of all newly diagnosed cancers in males. In 1996, 763 men in the state were diagnosed with bladder cancer, for an age-adjusted incidence rate of 23.7 cases per 100,000 men.

The age-adjusted incidence rate of bladder cancer in Massachusetts men has decreased over time, from 27.6 per 100,000 in 1982 to 23.7 per 100,000 in 1996 -- a decrease of 14%. During this

period the incidence of bladder cancer in SEER areas remained steady at about 30 cases per 100,000 men from 1982 through 1988, and then began a slow decline to 27.7 cases per 100,000 in 1996. The 1996 rate for SEER registries was 17% higher than in Massachusetts.

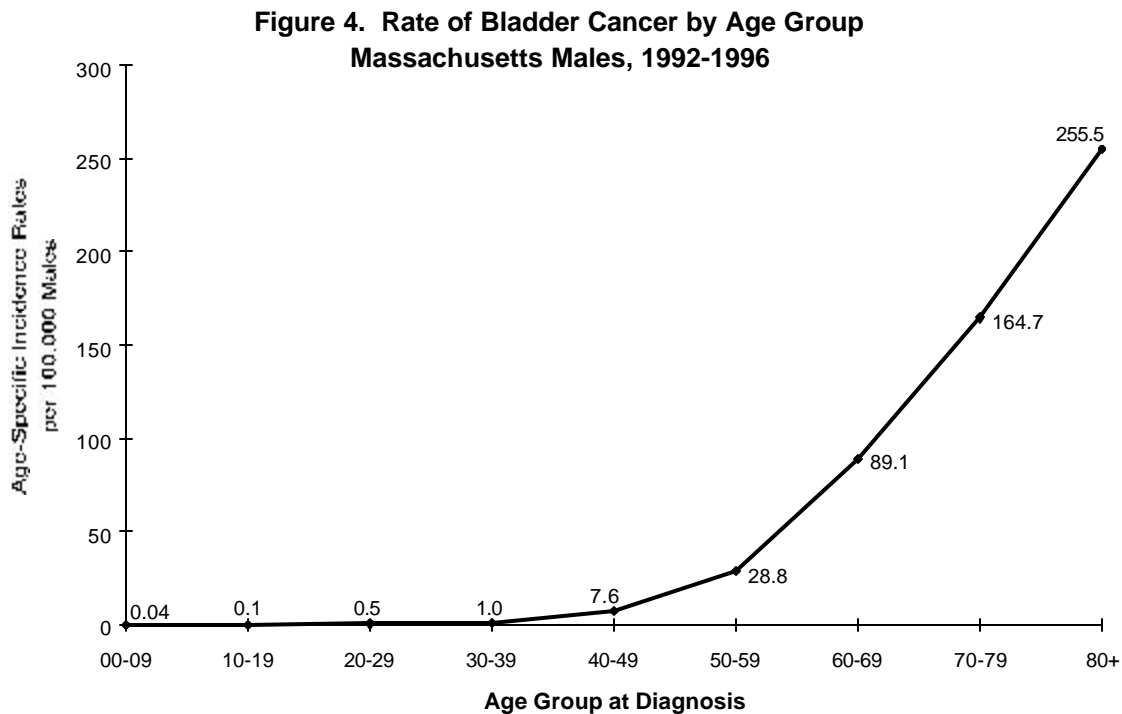
Figure 3. Male Bladder Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996



Bladder Cancer Age-Adjusted Incidence Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	27.6	29.0	26.9	27.6	27.2	28.3	27.6	25.8	25.9	25.1	23.9	23.7	21.1	23.2	23.7
SEER	28.1	28.7	30.0	28.9	30.1	31.4	30.2	29.7	29.8	29.6	29.7	29.9	29.2	28.4	27.7

The incidence of bladder cancer increases steadily with age, with a rate of 256 cases per 100,000 in men aged 80 years and older.



STAGING

Nearly 75% of bladder cancers are detected at an early stage, when treatment is most effective. Between 1985 and 1995, the proportion of cases diagnosed at a distant stage (after the cancer has spread to other parts of the body) declined slightly, from 6% in 1985 to under 4% in 1995.

Table 3. Bladder Cancer Stage at Diagnosis Massachusetts Males, 1985, 1990 and 1995			
Stage at Diagnosis:	1985	1990	1995
Localized (in one spot)	76.0 %	75.8 %	73.0 %
Regional (spread to some nearby areas)	8.9 %	9.6 %	14.0 %
Distant (spread into other parts of the body)	6.1 %	3.1 %	3.7 %
Unstaged (a stage cannot be assigned)	9.0 %	11.5 %	9.3 %

TREATMENT

Treatment of bladder cancer may include surgery, radiation and/or chemotherapy.

SURVIVAL

Five-year relative survival rates for men with bladder cancer have increased in the past 20 years, from 79.1% of men diagnosed between 1980 and 1982 to 83.1% of men diagnosed between 1989 and 1995. These increases have been seen in both white and black men, although black men continue to have lower survival rates than white men. Regardless of race, men under the age of 65 years at the time of diagnosis have a better survival rate than those aged 65 years or older.

Table 4 at a glance:

- Survival rates are better for men diagnosed at a localized stage than for men diagnosed at a regional or distant stage.
- White men have better survival rates than black men for all age and stage groups.
- Younger men have slightly better survival rates than older men.

Table 4. Bladder Cancer 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	83.1 %	83.9 %	66.6 %
By Stage at Diagnosis:			
Localized (in one spot)	93.8 %	94.2 %	86.6 %
Regional (spread to some nearby areas)	51.6 %	52.1 %	36.8 % +
Distant (spread into other parts of the body)	7.1 %	7.9 %	0.0 %
By Age at Diagnosis:			
Under 65 years	87.8 %	88.5 %	72.7 %
65 years and over	80.4 %	81.2 %	60.8 %

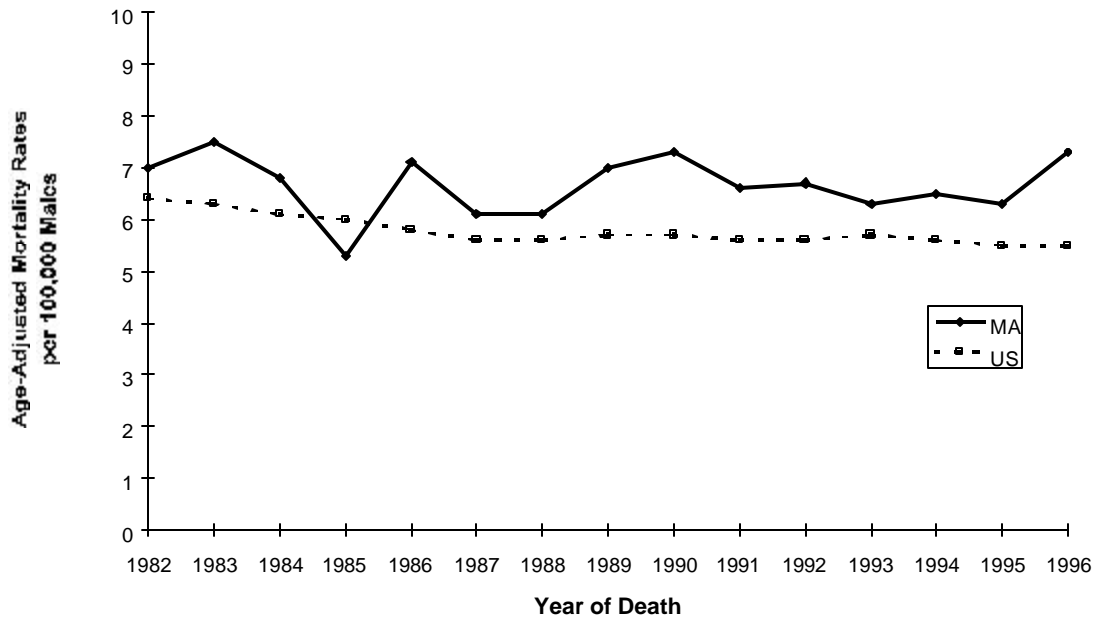
+ This number may not be accurate because of the small number of men in this category.

MORTALITY

Bladder cancer accounted for 3% of cancer deaths between 1982 and 1996. During this period, 3,000 Massachusetts men died of bladder cancer. In 1996, 238 men died, for an age-adjusted mortality rate of 7.3 per 100,000.

Since 1982, the age-adjusted mortality rate in Massachusetts men has fluctuated between a high of 7.5 in 1983 and a low of 5.3 per 100,000 in 1985. US rates have shown a downward trend, from 6.4 deaths per 100,000 in 1982 to 5.5 per 100,000 in 1996. In general, Massachusetts mortality rates have been higher than those seen nationally.

Figure 5. Male Bladder Cancer Mortality Trends for Massachusetts and United States, 1982-1996



Bladder Cancer Age-Adjusted Mortality Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	7.0	7.5	6.8	5.3	7.1	6.1	6.1	7.0	7.3	6.6	6.7	6.3	6.5	6.3	7.3
US	6.4	6.3	6.1	6.0	5.8	5.6	5.6	5.7	5.7	5.6	5.6	5.7	5.6	5.5	5.5

COLORECTAL CANCER

RISK FACTORS

Colorectal Cancer Risk Factors:

- Age (In Massachusetts men, incidence rates begin to increase markedly in the 50 to 59 year age group, and continue to increase markedly in the 60 to 69 year and 70 to 79 year age groups. Incidence rates are highest in the 80 year and older age group.)

For both men and women with none of the other risk factors listed below, the risk of developing colorectal cancer begins to rise sharply at age 40 and doubles every 10 years. For example, a person 60 years old is twice as likely to be diagnosed with colorectal cancer as a 50-year-old person.

- A personal history of colorectal polyps (adenomas) or cancer
- A family history of colorectal cancer or polyps (adenomas), including the various polyposis syndromes such as familial adenomatous polyposis, Gardner's Syndrome or Peutz-Jeghers Syndrome.

Note: for both men and women, the risk of colorectal polyps and cancer in persons with a positive family history often increases at an earlier age than in persons without a family history, especially if one first-degree relative -- a parent, sibling or child -- had a colorectal cancer or adenomatous polyp diagnosed before age 50, or if more than one first-degree relative has been affected at any age.

- A personal history of inflammatory bowel disease such as ulcerative colitis or Crohn's Disease
- A diet high in red meat, and low in fruits, vegetables and folic acid
- Physical inactivity

Possible Risk Factors:

- Alcohol, especially beer
- Smoking
- Increasing body fat

Note: 85% of all persons diagnosed with colorectal cancer have none of these risk factors except age.

PREVENTION

To Reduce the Risk of Colorectal Cancer:

- Be screened, and have colon polyps removed. (Polyps are benign growths on the inside lining of the colon which may become cancerous with time, and can usually be removed without the need for major surgery.)
- Eat more chicken and fish, and less red meat.
- Maintain a healthy weight.
- Eat a minimum of five servings of fruits and vegetables a day. (One serving is 1/2 cup cooked vegetable, 1 cup leafy vegetable, 1 whole fruit such as an apple or pear, or 1/4 cup dried fruit.)
- Eat more foods high in folic acid, such as green leafy vegetables, citrus fruits and beans.
- Increase your physical activity.
- Don't smoke.
- Ask your health care provider about taking an aspirin 2 to 3 times a week.
- Limit alcohol intake to fewer than 2 drinks a day for men and 1 drink a day for women.

Possible Prevention Measures:

- Take a multivitamin daily.
- Take 1,200 mg calcium supplement daily.

SCREENING

Screening for Colorectal Cancer:

- A *stool blood test* (also known as *fecal occult blood testing*, or *FOBT*) every year for persons age 50 and older. The test involves taking samples of three bowel movements. Before you have one of these tests, you should follow a special diet for 48 hours beforehand: no meat, high fiber, and no vitamin C (either in foods or as a vitamin). A positive stool blood test does not mean you have cancer, since blood in the stool may be caused by other factors such as diet or hemorrhoids. Talk to your health care provider about what your test results mean and what tests are needed next.

Or

- A *flexible sigmoidoscopy* (a slender lighted instrument inserted up the rectum for visual exam) every 3 to 5 years for persons age 50 and older. This test takes only 5 to 10 minutes, and is done in your health care provider's office or as an outpatient at a hospital.

Or

- A *stool blood test* (also known as *fecal occult blood testing*, or *FOBT*) every year with a *flexible sigmoidoscopy* every 5 years.

Or

- A *colonoscopy* every 10 years for persons age 50 and older. A *colonoscopy* is similar to a sigmoidoscopy, but it allows all 5 feet of the colon to be seen. This test generally is done as an outpatient at a hospital, and requires an intravenous sedative.

Or

- A *double-contrast barium enema* (also known as a *DCBE* or a *lower GI series*) every 5-10 years for persons age 50 and older. After a person is administered a barium enema, x-rays of the colon and rectum will help reveal tumors or other abnormal areas. This screening test may be performed with a *sigmoidoscopy*.

If there is a family history of colon cancer at a young age, or of polyps or inflammatory bowel disease, screening may begin as early as age 20.

- For high-risk individuals, a *colonoscopy* may be the preferred screening test. A *barium enema*, preferably combined with *sigmoidoscopy*, may be considered as an alternative screening test.

Colorectal cancer can be treated easily if detected early.

SYMPTOMS

Common Warning Signs of Colorectal Cancer Include:

- Rectal bleeding/blood in the stool -- blood may be visible, or may be detectable only by the stool blood test
- Change in bowel habits
- Abdominal pain which does not go away
- Unaccountable weight loss -- losing weight without trying
- Unexplained anemia

Less Common Warning Signs of Colorectal Cancer Include:

- Abdominal bloating
- Sensation of incomplete bowel movement
- Pencil-like or narrow stool
- Pain in the lower back
- Bladder symptoms, such as feeling the need to urinate too frequently
- Enlargement of the liver

DETECTION

Colorectal cancer can be detected by *sigmoidoscopy* (if the cancer is located in the lower portion of the colon or rectum), *colonoscopy*, or *barium enema* with air contrast (an x-ray of the entire colon). Persons with symptoms, a positive stool blood test, or precancerous polyps seen at sigmoidoscopy should be further evaluated by either a colonoscopy or barium enema. A *biopsy* (removing a piece of abnormal tissue and examining it under a microscope) is required to confirm the presence of cancer.

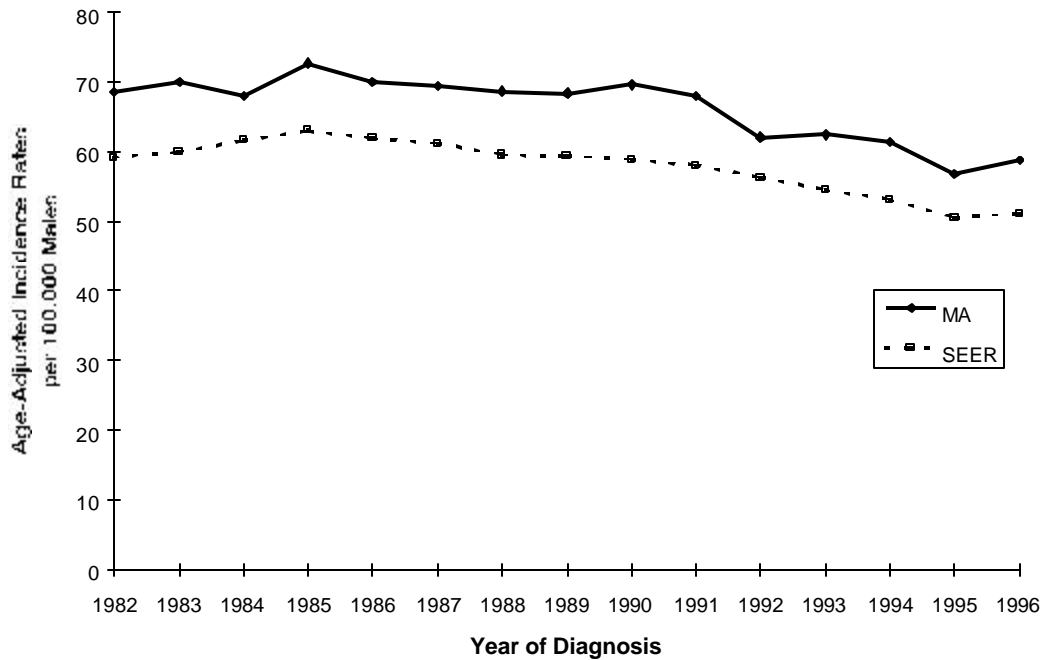
INCIDENCE

Based on national data, the average man has approximately a 5.6% lifetime risk of developing invasive colorectal cancer, or about a one in 18 chance. While incidence has declined in recent years in both white and black men, rates continue to be higher in black men.

In Massachusetts, 29,593 new cases of colorectal cancer were reported in men between 1982 and 1996. Colorectal cancer was the third most common type of cancer in males during this period, accounting for 14.8% of all newly diagnosed cancers. In 1996, 1,906 men in the state were diagnosed with colorectal cancer, for an age-adjusted incidence rate of 58.9 per 100,000.

Overall, the age-adjusted incidence rate of colorectal cancer in Massachusetts men has gone down in recent years, from 68.6 per 100,000 in 1982 to 58.9 per 100,000 in 1996 -- a decrease of 14%. This decrease was comparable to that observed in SEER areas (14% between 1982 and 1996, from 59.2 per 100,000 to 51.1 per 100,000). Massachusetts incidence continues to be higher than SEER incidence, however.

Figure 6. Male Colorectal Incidence Trends for Massachusetts and SEER Areas, 1982-1996

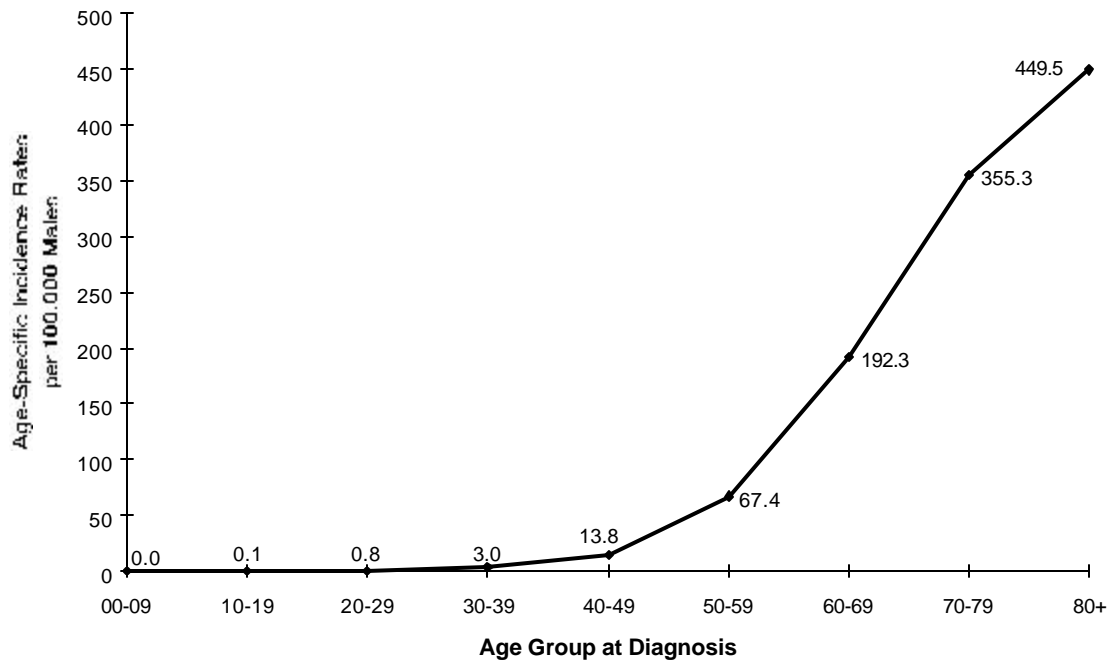


Colorectal Cancer Age-Adjusted Incidence Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	68.6	69.9	67.9	72.7	70.0	69.5	68.7	68.4	69.6	67.9	62.1	62.4	61.4	56.8	58.9
SEER	59.2	59.9	61.6	63.0	61.9	61.2	59.5	59.4	58.9	58.0	56.3	54.5	53.1	50.5	51.1

The incidence of colorectal cancer increases steadily with age, reaching 450 cases per 100,000 in men aged 80 years and older in Massachusetts.

**Figure 7. Rate of Colorectal Cancer by Age Group
Massachusetts Males, 1992-1996**



STAGING

Fewer than one-third of colorectal cancers are diagnosed at an early stage, when treatment is most effective. Overall, the increase in early detection seen in some other cancers, such as prostate cancer, has not been observed in colorectal cancer.

Table 5. Colorectal Cancer Stage at Diagnosis Massachusetts Males, 1985, 1990 and 1995			
Stage at Diagnosis:	1985	1990	1995
Localized (in one spot)	33.0 %	29.5 %	31.7 %
Regional (spread to some nearby areas)	45.2 %	45.6 %	45.5 %
Distant (spread into other parts of the body)	15.4 %	16.8 %	17.1 %
Unstaged (a stage cannot be assigned)	6.4 %	8.1 %	5.7 %

TREATMENT

Surgery is the primary form of treatment for colorectal cancer. Chemotherapy also may be used. Patients with rectal cancer may also be treated with radiation and/or chemotherapy before surgery. A colostomy (wearing a bag outside the body to collect stools) is now required less often in the treatment of colorectal cancer.

SURVIVAL

Five-year relative survival rates for men with colorectal cancer have increased approximately 7% since 1980, to about 61%, with comparable increases occurring in both white and black men. Despite these increases, white men have higher survival rates than black men for all stages and age categories. In general, survival rates are comparable for older and younger men. Younger black males have a higher survival rate than older black men, however.

Table 6 at a glance:

- Survival rates are poorer for men diagnosed at later stages.
- White men have better survival rates than black men.
- Survival rates are comparable for older and younger men, except among black men (in whom younger men have a higher survival rate than older men).

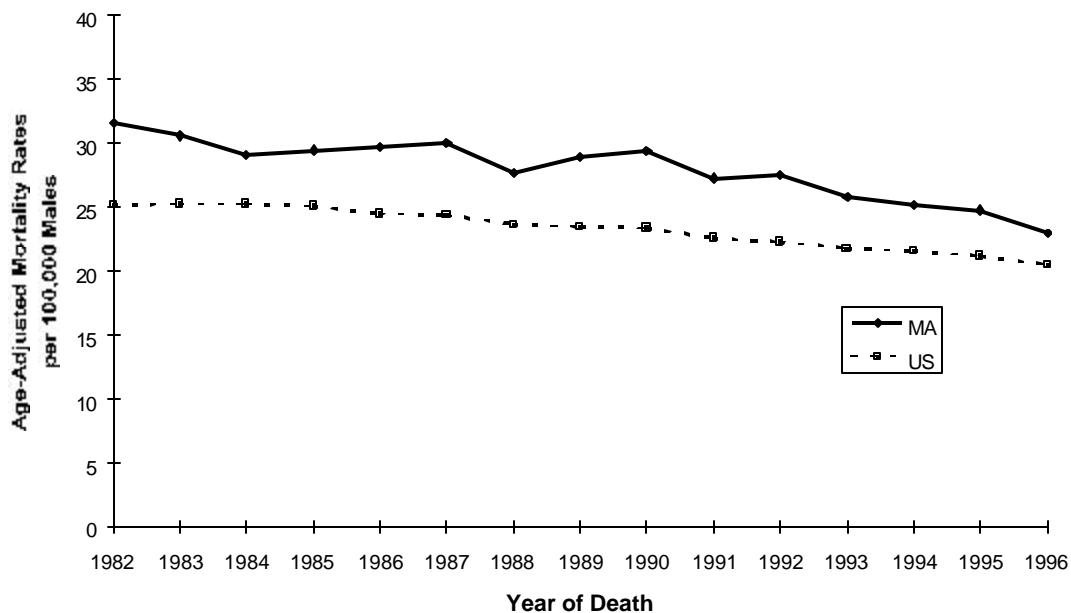
Table 6. Colorectal Cancer 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	61.2 %	62.0 %	51.7 %
By Stage at Diagnosis:			
Localized (in one spot)	89.5 %	90.4 %	84.6 %
Regional (spread to some nearby areas)	64.6 %	65.2 %	58.6 %
Distant (spread into other parts of the body)	8.2 %	8.1 %	7.7 %
By Age at Diagnosis:			
Under 65 years	61.6 %	62.5 %	54.2 %
65 years and over	61.0 %	61.9 %	49.2 %

MORTALITY

Colorectal cancer is the second leading cause of cancer deaths in men in Massachusetts, accounting for 12.4% of cancer deaths between 1982 and 1996. (For 1996, however, prostate cancer mortality was slightly higher.) During this period, 12,554 Massachusetts men died of colorectal cancer. In 1996, 745 men died, for an age-adjusted mortality rate of 23.0 per 100,000.

Although colorectal cancer death rates for Massachusetts men are higher than the overall rates for men in the US, this gap has narrowed over time. Since 1982, the age-adjusted mortality rate in Massachusetts men has declined 27%, from 31.6 per 100,000 in 1982 to 23.0 per 100,000 in 1996. US rates decreased 19% between 1982 and 1996, from 25.2 per 100,000 to 20.5 per 100,000.

Figure 8. Male Colorectal Cancer Mortality Trends for Massachusetts and United States, 1982-1996



Colorectal Cancer Age-Adjusted Mortality Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	31.6	30.6	29.1	29.5	29.8	30.1	27.7	29.0	29.4	27.3	27.6	25.8	25.2	24.8	23.0
US	25.2	25.3	25.3	25.1	24.5	24.4	23.7	23.5	23.4	22.6	22.3	21.8	21.6	21.2	20.5

LUNG CANCER

Note: All information and data below refer to both lung cancer and to cancer of the bronchus (the tube(s) responsible for carrying air to and from the lungs).

RISK FACTORS

Lung Cancer Risk Factors:

- Smoking
Note: smoking “light” cigarettes does not reduce cancer risk.
- Occupational, and in some cases environmental, exposures (e.g., asbestos, metals)
- Exposure to secondhand smoke (other people’s smoke)

Note: 85% of all lung cancers are caused by smoking. The risk of lung cancer is 10 times greater for men who smoke up to one pack of cigarettes a day and 20 times greater for men who smoke more than one pack of cigarettes a day than for men who do not smoke. More men die of lung cancer than of any other type of cancer.

PREVENTION

To Reduce the Risk of Lung Cancer:

- **Don’t smoke** -- and if you do smoke, quit. Smoking is responsible for 85% of lung cancer cases among men.
- Avoid secondhand smoke (other people's smoke).
- Minimize occupational exposure to cancer-causing agents such as arsenic, asbestos, chromium compounds, coal tars, mustard gas, nickel, petroleum, and radioactive ores such as uranium.
- Limit your chances for environmental exposure to similar agents, such as airborne exposure to arsenic or indoor radon.
- Eat more vegetables and fruits.

SCREENING

There is no specific screening test for lung cancer.

Tell your health care provider if you are a smoker or former smoker.

SYMPTOMS

Warning Signs of Lung Cancer Include:

- Smokers' cough which lasts
- A cough which hangs on for more than two weeks in nonsmokers
- Chest pain that lasts even when you are not coughing
- Wheezing sound when breathing
- Shortness of breath or finding it hard to breathe
- Bloodstained sputum (blood when you spit)
- Change in color or volume of sputum (what is spit up)
- Shoulder and arm pain
- Hoarse voice
- Recurring pneumonia or bronchitis
- Fever
- Feeling weak
- Unaccountable weight loss -- losing weight without trying
- Difficulty swallowing
- Enlarged lymph nodes in the neck
- Drooping of one eyelid (Horner's syndrome)
- Club-shaped fingertips and/or tips of the toes, with or without joint pain and swelling of the lower legs

DETECTION

Lung Cancer Detection May Include:

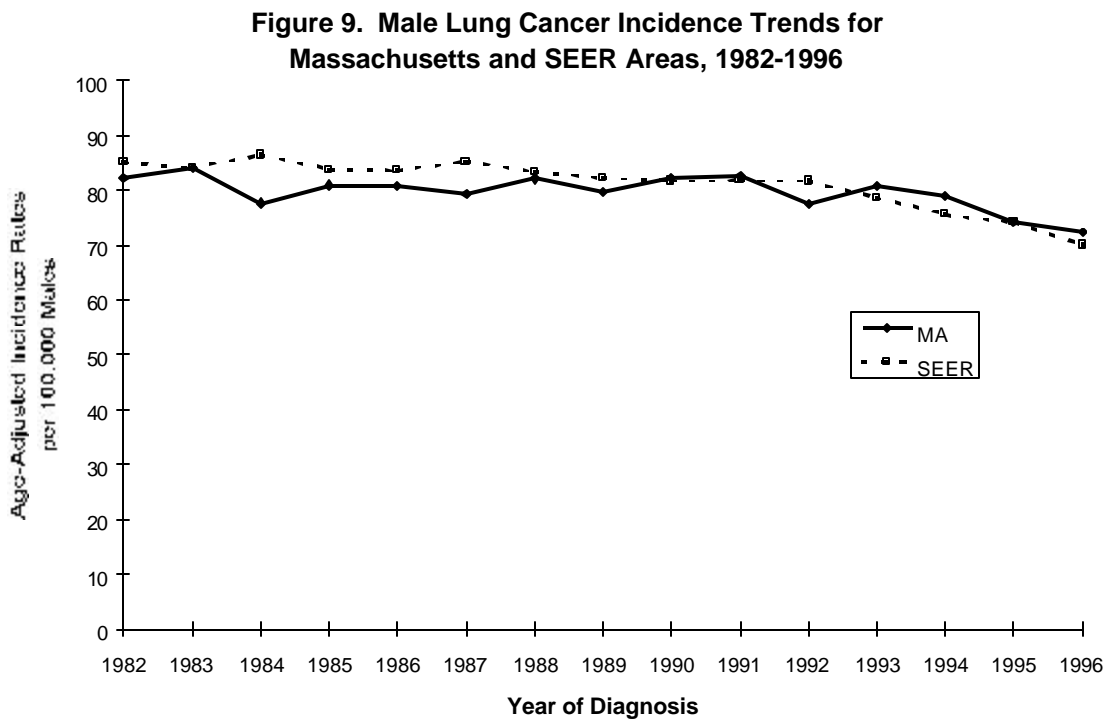
- *Biopsy* (removal of suspicious tissue for study under a microscope)
- *Bronchoscopy* (sliding a lighted tube down the throat)
- *Chest x-ray*
- *Computed tomographic (CT) scanning* of the chest or abdomen (a special x-ray to give a detailed picture of the lungs and chest or other organs inside the body)
- *Mediastinoscopy* (inserting a slender instrument through a cut in the neck to remove lymph nodes for microscopic exam)
- *Microscopic sputum exam* (examining what you cough up under a microscope)
- *Pulmonary function test* (a machine records how the lungs work during exercise)
- *Transthoracic needle aspiration* (TNA -- inserting a needle into a growth in the lung and removing a piece of the growth for microscopic exam)
- *Thoracentesis* (inserting a needle into the chest to draw out fluid to see if there are cancer cells in the fluid)
- *Thoracoscopy* (inserting a slender lighted tubular instrument into lung cavity through a cut between two ribs to examine the lung and chest wall and take tissue samples)

INCIDENCE

Based on national data, the average man has approximately an 8% lifetime risk of developing invasive lung cancer, or about a one in 12 chance. It's important to note that these are *average* risks, based on data from both smokers and non-smokers. A smoker will have a much higher chance of developing lung cancer, and a non-smoker will have a lower risk. For people who smoke two or more packs of cigarettes a day, the risk is *20 times* that of a non-smoker.

In Massachusetts, 35,332 new cases of lung cancer in men were reported between 1982 and 1996. During this period, lung cancer accounted for 17.7% of all newly diagnosed cancers in men. Between 1982 and 1996, lung cancer was the second most common cancer diagnosed in men, after prostate cancer. In 1996, 2,270 men were diagnosed with lung cancer, an age-adjusted incidence rate of 72.3 per 100,000.

Overall, male lung cancer incidence rates in Massachusetts are similar to those in SEER areas. The incidence of lung cancer in Massachusetts men has remained fairly steady over time, at about 80 new cases per 100,000 men through 1993, but has shown about a 10% decline between 1993 and 1996. SEER data have also shown a similar small decline in recent years. These decreases in incidence may be due to changes in smoking patterns among American men in recent decades.

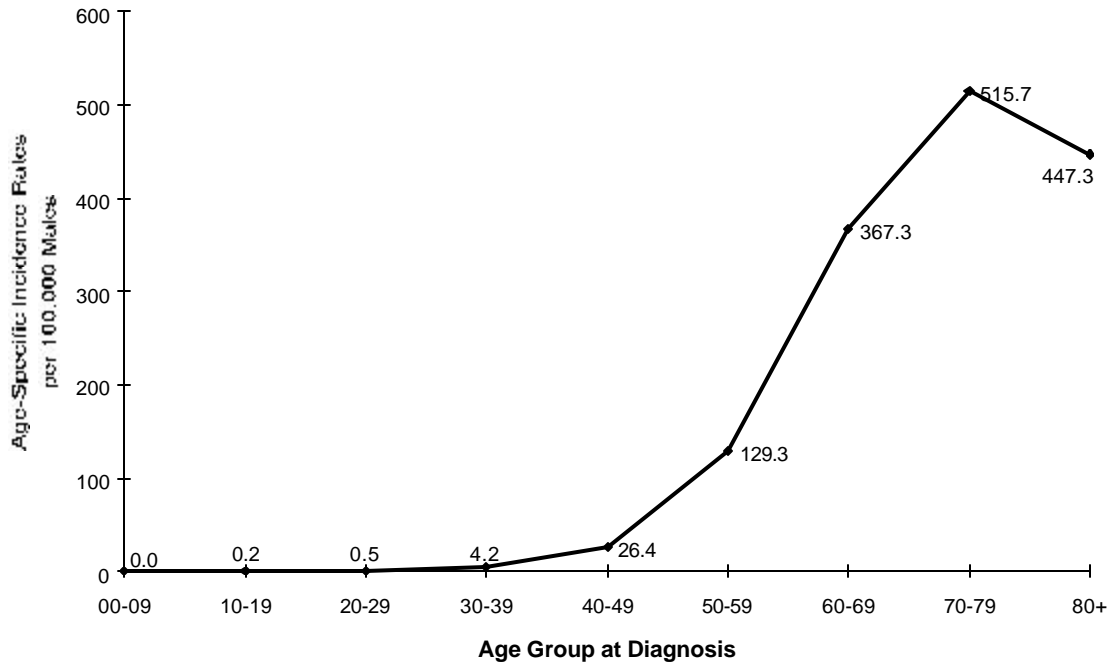


Lung Cancer Age-Adjusted Incidence Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	82.2	84.0	77.7	81.0	80.7	79.4	82.1	79.8	82.3	82.5	77.5	80.8	78.9	74.3	72.3
SEER	85.1	84.1	86.5	83.8	83.6	85.3	83.4	82.2	81.7	81.8	81.7	78.7	75.6	74.1	70.0

Lung cancer incidence increases with age, peaking at about 516 cases per 100,000 men aged 70-79 years in Massachusetts, and then declines slightly in those aged 80 and older.

**Figure 10. Rate of Lung Cancer by Age Group
Massachusetts Males, 1992-1996**



STAGING

Unlike other cancers, the proportion of cases of lung cancer detected at an early (local) stage has actually decreased over time, from 26.4% in 1985 to only 20.2% in 1995. Over 70% of lung cancers diagnosed in 1995 were detected only after they had spread, either to nearby areas or to other parts of the body. Cancers diagnosed at a later stage are much less treatable than those found earlier.

**Table 7. Lung Cancer Stage at Diagnosis
Massachusetts Males, 1985, 1990 and 1995**

Stage at Diagnosis:	1985	1990	1995
Localized (in one spot)	26.4 %	22.1 %	20.2 %
Regional (spread to some nearby areas)	23.4 %	27.9 %	33.1 %
Distant (spread into other parts of the body)	37.2 %	38.8 %	39.0 %
Unstaged (a stage cannot be assigned)	13.0 %	11.2 %	7.7 %

TREATMENT

Lung cancer is treated with chemotherapy, radiation, surgery, or a combination of these techniques. New chemical and biological agents and gene therapies are under study.

SURVIVAL

Lung cancer has the poorest survival rate of the eight cancers included in this report -- fewer than 13% of men diagnosed with lung cancer survive at least five years after diagnosis. Men diagnosed at a localized stage have about a 45% 5-year relative survival rate. Unfortunately, however, only about 20% of cases are diagnosed this early. Most lung cancers are diagnosed at a regional or distant stage, when the cancer has spread beyond the lung. Rates for men presenting with distant disease are particularly low, with only 1.9% surviving at least five years. There has been little improvement in survival rates over time. Persons who smoke two or more packs of cigarettes a day are *15 to 25 times* more likely to die of lung cancer than a non-smoker.

White men show better survival than black men for all age groups; the difference in rates is larger in younger age groups. Survival is also better for white men for all stages but distant, although survival at that stage is extremely poor regardless of race. Overall, survival is slightly better among younger men, although it is still low.

Table 8 at a glance:

- Survival rates are poorer for men diagnosed at later stages.
- In general, white men have better survival rates than black men.
- Younger men have better survival rates than older men.

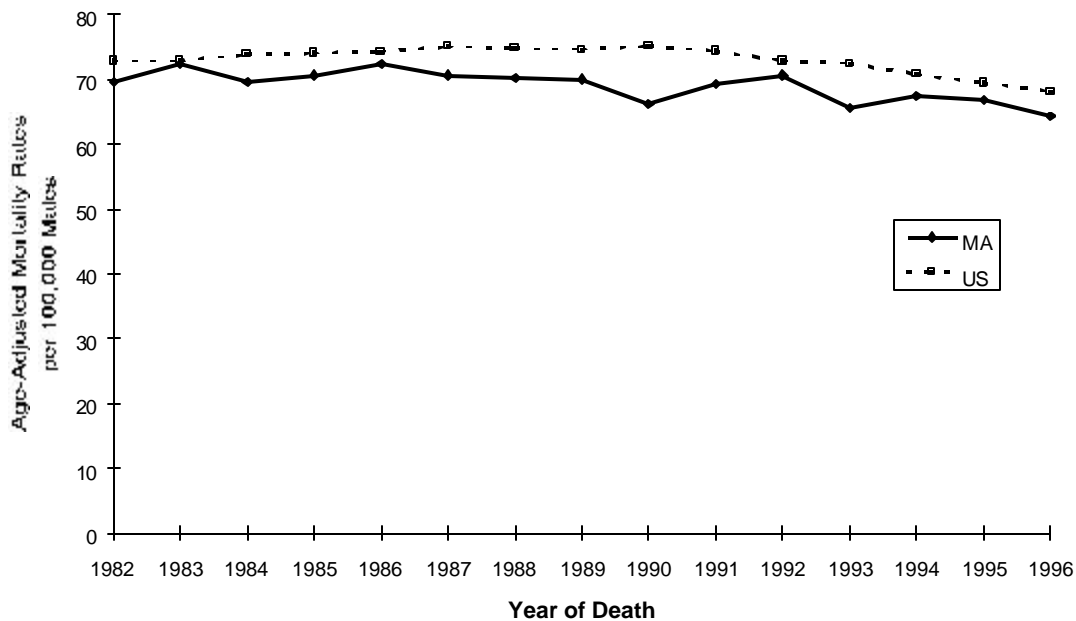
Table 8. Lung Cancer 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	12.4 %	12.7 %	9.9 %
By Stage at Diagnosis:			
Localized (in one spot)	45.5 %	46.1 %	38.3 %
Regional (spread to some nearby areas)	18.2 %	18.9 %	13.6 %
Distant (spread into other parts of the body)	1.9 %	1.8 %	2.1 %
By Age at Diagnosis:			
Under 65	14.2 %	14.8 %	10.5 %
65 and over	11.0 %	11.1 %	9.0 %

MORTALITY

Lung cancer is the leading cause of cancer death in Massachusetts men, accounting for 30% of cancer deaths. Between 1982 and 1996, 30,698 men died of lung cancer in Massachusetts. Mortality rates remained fairly steady during this period, with a high of 72.4 cases per 100,000 males in 1983. In 1996, 2,047 men in Massachusetts died of lung cancer, for an age-adjusted mortality rate of 64.3 per 100,000 men.

Lung cancer mortality rates have remained fairly constant in men, but small declines have been noted in recent years both in Massachusetts and the US. For the period 1990-1996, lung cancer mortality was on average about 7% lower among Massachusetts men than nationally.

Figure 11. Male Lung Cancer Mortality Trends for Massachusetts, 1982-1996 and United States, 1982-1995



Lung Cancer Age-Adjusted Mortality Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	69.6	72.4	69.6	70.7	72.3	70.7	70.3	70.1	66.2	69.4	70.7	65.6	67.5	66.8	64.3
US	72.9	72.9	73.9	74.1	74.3	75.1	74.8	74.7	75.2	74.4	72.9	72.5	70.8	69.5	68.2

MELANOMA *

RISK FACTORS

Note: *Changing or changed moles, or new moles which appear after age 30 that itch and are tender are early, potentially malignant lesions, and should be examined by a health care professional.*

Melanoma Risk Factors:

- Age (The risk of melanoma begins to increase at age 15. Incidence in Massachusetts men increases steadily thereafter, with highest incidence in men ages 80 years and older.)
- One or more large or unevenly colored lesions such as:
 - Dysplastic mole(s), with or without a family history of melanoma
 - Lentigo maligna
- Familial atypical mole and melanoma syndrome
- Giant congenital melanocytic nevi (pigmented patches of skin)
- Nevus (birthmark) since birth
- Caucasian
- Previous melanoma
- Family history of melanoma
- Immunosuppression (when the body's defenses are weakened, such as after transplant surgery)
- Sun sensitivity
- Repeated sunburns, especially as a child
- Easily sunburned
- Freckling
- Unable to tan easily

Melanoma is most common on the skin surface but can arise in other parts of the body as well, such as the eye or mouth.

* Melanoma is the most deadly form of skin cancer. Other forms of skin cancer are basal-cell and squamous-cell, which are not reportable to the Massachusetts Cancer Registry and are not included in this report.

PREVENTION

To Reduce the Risk of Melanoma:

- Limit your time in the sun. Especially try to minimize sun exposure between 10 a.m. and 4 p.m.
- Use a waterproof sunscreen of SPF 15 or higher whenever you're outside, and reapply often -- at least once every two hours or whenever you come out of the water. Sunscreen should be reapplied after swimming or sweating.
- Wear hats, long-sleeved shirts and long pants to protect the body from the sun.
- Never use tanning booths, tanning parlors or sunlamps.
- Avoid the sun when taking drugs which make your skin more sensitive to light (photosensitive drugs), including antibiotics such as tetracycline, tretinoin (Retin A), sleeping pills and diuretics (water pills).

SCREENING

Screening for Melanoma:

- Examine yourself under bright light using a full-length mirror and a hand mirror in order to see your back. (Nearly 1/3 of all melanomas in men are on the back.)
- Have a complete exam of your skin, including your scalp, by a specially trained health care clinician -- doctor, nurse practitioner or physician's assistant -- beginning as early as age 20. The frequency of examinations should be determined by you and your clinician.

In families with a history of melanoma, screening should be done yearly.

SYMPTOMS

Warning Signs of Melanoma Include:

- A new mole
- Moles that change color, shape, size or height
- Moles that itch or are painful
- Moles that bleed
- Moles with **ABCD** features:
 - Asymmetry (not the same proportions throughout)
 - Border irregularities
 - Color that varies
 - Diameter greater than 6 millimeters (a quarter of an inch or greater -- larger than an eraser on the head of a pencil)

DETECTION

An *excisional biopsy* (in which the mole and a rim of normal tissue around it are cut out) is the usual way to determine if you have a melanoma. This is performed under local anesthesia in a health care provider's office or as an outpatient. (If melanoma is suspected, the lesion should *not* be burned off.)

INCIDENCE

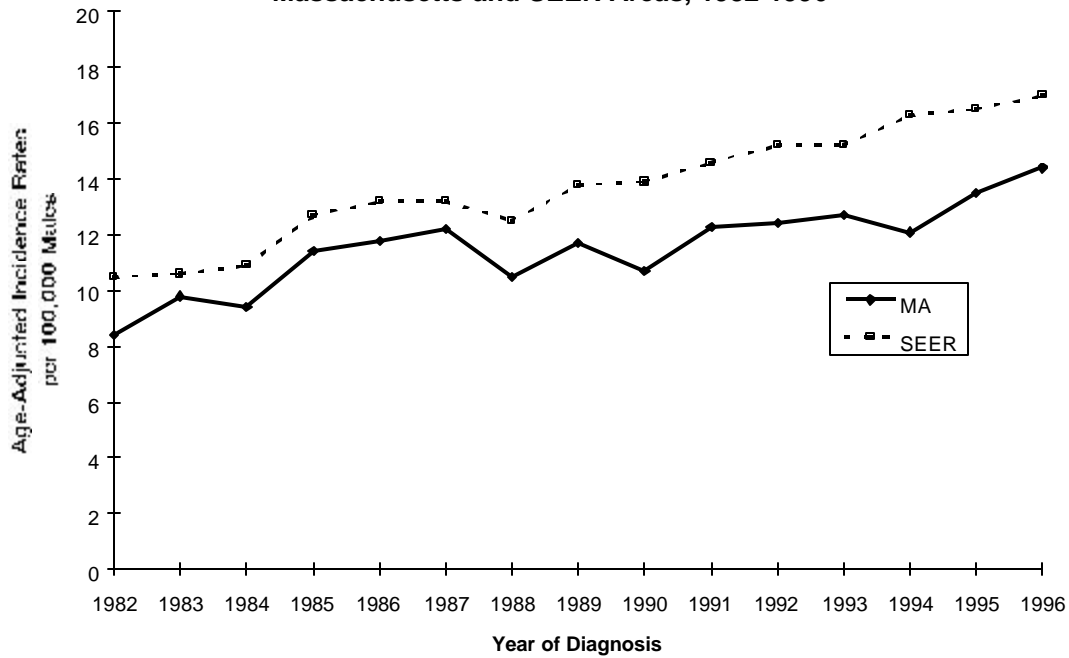
Based on national data, the average man has approximately a 1.6% lifetime risk of developing invasive melanoma (about a one in 63 chance). The risk for a white man is about one in 54, while a black man has a much lower risk, about one in 769.

In Massachusetts, 5,283 new cases of melanoma were reported in males between 1982 and 1996. During this interval, melanoma accounted for 2.6% of newly diagnosed cancers in males. In 1996, 473 Massachusetts men were diagnosed with melanoma, an age-adjusted incidence rate of 14.4 per 100,000.

The incidence rate of melanoma in Massachusetts men has increased approximately 71% since 1982, from 8.4 per 100,000 to 14.4 per 100,000 in 1996. Rates have fluctuated somewhat during this period, however, because of the relatively small number of men diagnosed each year. State incidence is about 11% lower than SEER area incidence. One key reason for the lower Massachusetts rates may be that SEER collects information from non-hospital reporting sources (such as pathology laboratories) as well as hospitals, while Massachusetts data for this period

were only reported from hospitals. Nationally, incidence has increased about 62%, from 10.5 per 100,000 in 1982 to 17.0 per 100,000 in 1996.

Figure 12. Male Melanoma Incidence Trends for Massachusetts and SEER Areas, 1982-1996

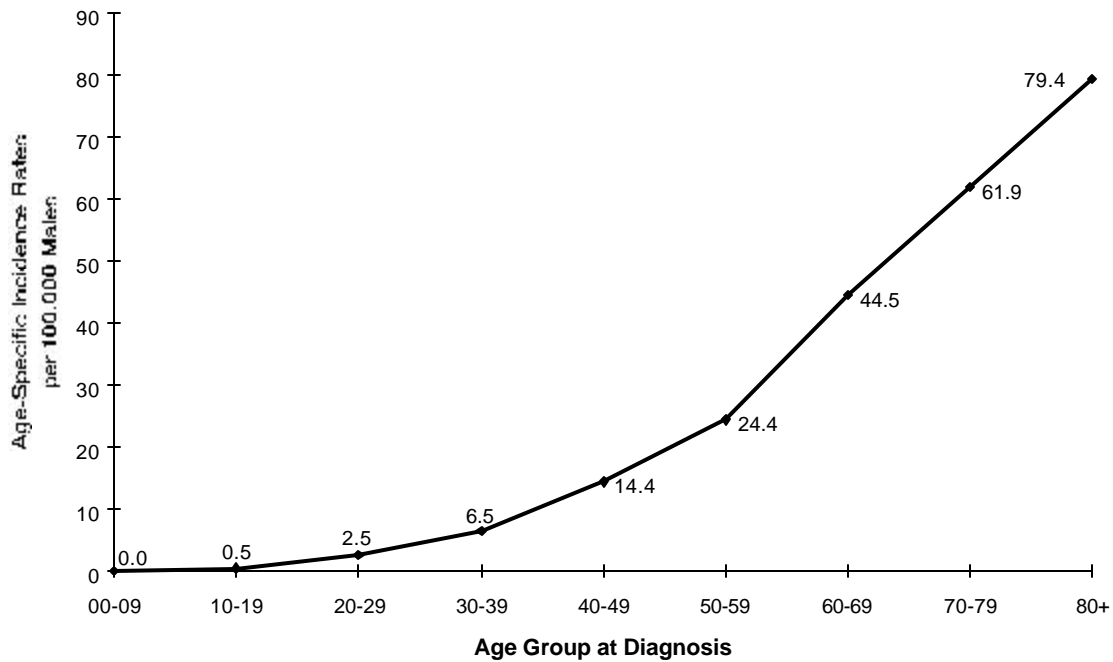


Melanoma Age-Adjusted Incidence Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	8.4	9.8	9.4	11.4	11.8	12.2	10.5	11.7	10.7	12.3	12.4	12.7	12.1	13.5	14.4
SEER	10.5	10.6	10.9	12.7	13.2	13.2	12.5	13.8	13.9	14.6	15.2	15.2	16.3	16.5	17.0

Melanoma incidence increases steadily with age, peaking at 79 cases per 100,000 in men aged 80 years and older.

**Figure 13. Rate of Melanoma by Age Group
Massachusetts Males, 1992-1996**



STAGING

Overall, more than 75% of melanomas are diagnosed at a localized stage, when the disease is most treatable. This proportion has remained somewhat constant over time. The proportion of melanomas diagnosed at a distant stage has decreased in recent years.

**Table 9. Melanoma Stage at Diagnosis
Massachusetts Males, 1985, 1990 and 1995**

Stage at Diagnosis:	1985	1990	1995
Localized (in one spot)	79.0 %	72.1 %	76.4 %
Regional (spread to some nearby areas)	5.4 %	6.1 %	9.1 %
Distant (spread into other parts of the body)	5.7 %	7.3 %	3.9 %
Unstaged (a stage cannot be assigned)	9.9 %	14.5 %	8.3 %

TREATMENT

Melanoma is usually treated by surgical removal of the entire cancerous area, including a border of normal tissue around it. For advanced melanoma, chemotherapy and/or immunotherapy may be used.

SURVIVAL

Overall, five-year relative survival for men diagnosed with melanoma is about 85%. Survival for white men has increased over time, presumably due to increased early detection (a greater proportion of cases being found earlier). The number of cases in black men is too small to draw any definitive conclusions.

Table 10 at a glance:

- Survival rates are poorer for men diagnosed at later stages.
- White men seem to have better survival rates than black men. (The number of black men who are diagnosed with melanoma is so small that their survival rates may not be accurate, however.)

Table 10. Melanoma 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	85.1 %	85.3 %	58.9 % +
By Stage at Diagnosis:			
Localized (in one spot)	94.1 %	94.2 %	82.8 % +
Regional (spread to some nearby areas)	54.2 %	54.6 %	--
Distant (spread into other parts of the body)	14.0 %	14.3 %	--
By Age at Diagnosis:			
Under 65 years	85.5 %	85.7 %	60.9 % +
65 years and over	84.3 %	84.7 %	--

-- Survival rate could not be calculated because of small numbers.

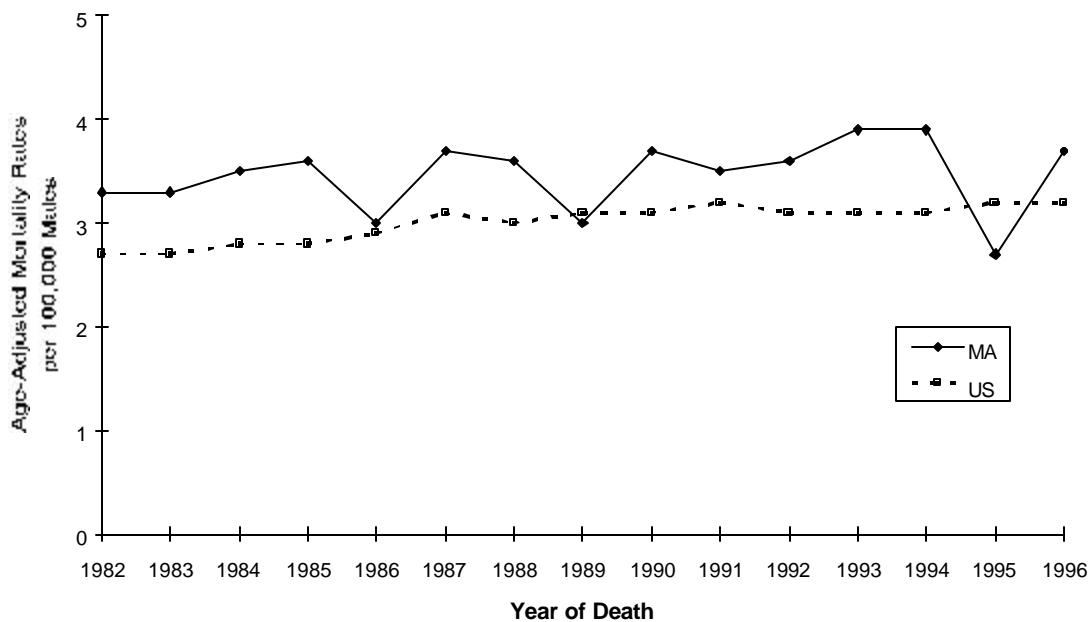
+ These numbers may not be accurate, since the number of black men with melanoma is so small.

MORTALITY

Between 1982 and 1996, 1,571 men in Massachusetts died of melanoma. During this period, melanoma accounted for 1.6% of cancer deaths in men. In 1996, 121 men died, for an age-adjusted mortality rate of 3.7 per 100,000. As with incidence, the small numbers of deaths from melanoma result in year-to-year fluctuations in the mortality rate. Over time, however, Massachusetts rates have increased about 12%, from 3.3 per 100,000 males in 1982 to 3.7 per 100,000 in 1996, and are generally higher than US rates. As noted earlier, incidence rates for Massachusetts are likely lower than SEER rates because Massachusetts case reporting was solely hospital-based during this period. Mortality data may thus present a more accurate representation of melanoma in Massachusetts.

It is hoped that as more men know about the risks and symptoms of melanoma, cases will be diagnosed at an earlier, more curable stage and mortality will decrease.

Figure 14. Male Melanoma Mortality Trends for Massachusetts and United States, 1982-1996



Melanoma Age-Adjusted Mortality Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	3.3	3.3	3.5	3.6	3.0	3.7	3.6	3.0	3.7	3.5	3.6	3.9	3.9	2.7	3.7
US	2.7	2.7	2.8	2.8	2.9	3.1	3.0	3.1	3.1	3.2	3.1	3.1	3.1	3.2	3.2

NON-HODGKIN'S LYMPHOMA

RISK FACTORS

Non-Hodgkin's Lymphoma Risk Factors:

- Age (In Massachusetts men, the incidence of non-Hodgkin's lymphoma increases steadily until ages 50-59. Beginning at ages 60-69, incidence increases sharply, reaching a peak in men ages 80 and older.)
- Abnormalities of the immune system, either congenital or resulting from suppression due to organ transplantation or disease
- Infection with HIV (human immunodeficiency virus, the virus that causes AIDS)
- Exposure to radiation or chemotherapy
- Exposure to certain herbicides

Possible Risk Factors:

- Smoking
- Other chemical exposures

PREVENTION

To Reduce the Risk of Non-Hodgkin's Lymphoma:

- Avoid exposure to radiation and herbicides.

SCREENING

There are no specific screening tests for non-Hodgkin's lymphoma.

SYMPTOMS

Common Warning Signs of Non-Hodgkin's Lymphoma Include:

- Enlargement of lymph nodes in the neck, under the arms or in the groin
- Fatigue
- Fever and night sweats
- Weight loss
- Intestinal disturbances such as diarrhea

Less Common Warning Signs Include:

- Swelling in the area of the tonsils, throat or upper airway
- Buildup of fluid in the membranes lining the chest or abdominal cavities
- Enlargement of the liver or spleen
- Abdominal mass
- Soft tissue swelling (swelling of tissues other than bone or muscle)

DETECTION

Non-Hodgkin's Lymphoma Detection May Include:

Blood Tests -- a complete blood count (CBC) may show abnormalities resulting from lymphoma.

Biopsy -- a biopsy of lymph nodes or bone marrow may confirm presence of cancer.

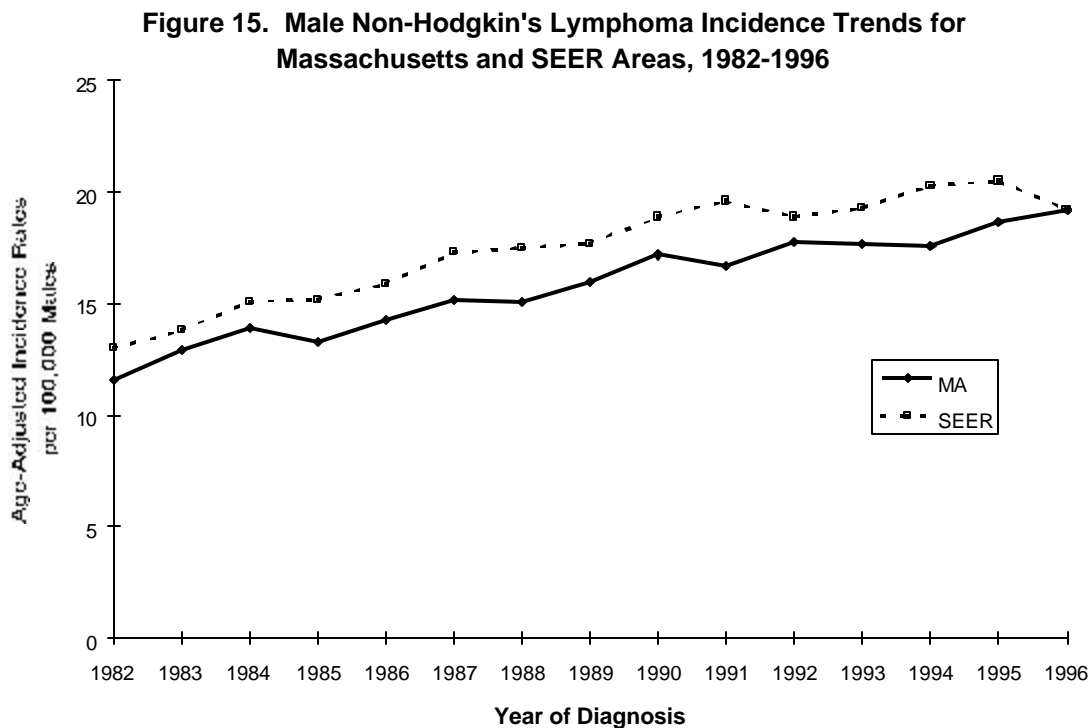
Chest X-Ray -- a chest x-ray may reveal whether lymph nodes are enlarged.

INCIDENCE

Based on national data, the average man has approximately a 2.1% lifetime risk of developing non-Hodgkin's lymphoma, or about a one in 48 chance. The risk is slightly higher for white men (2.2%, or 1 in 46), and is lower for black men (1.3%, or 1 in 78).

In Massachusetts, 7,259 new cases of non-Hodgkin's lymphoma were reported in men between 1982 and 1996. The number of cases diagnosed each year has increased steadily during this time period. This increase is due in part to the increased numbers of lymphoma cases associated with HIV infection and AIDS. Non-Hodgkin's lymphoma was the sixth most common type of cancer in males during this period, accounting for 3.6% of all newly diagnosed cancers. In 1996, 633 men in the state were diagnosed with non-Hodgkin's lymphoma, for an age-adjusted incidence rate of 19.2 per 100,000.

The age-adjusted incidence rate of non-Hodgkin's lymphoma in Massachusetts men has increased over time, from 11.6 per 100,000 in 1982 to 19.2 per 100,000 in 1996 (an increase of 66%). This increase was higher in Massachusetts than in the country as a whole (48% between 1982 and 1995, from 13.0 per 100,000 to 19.2 per 100,000).

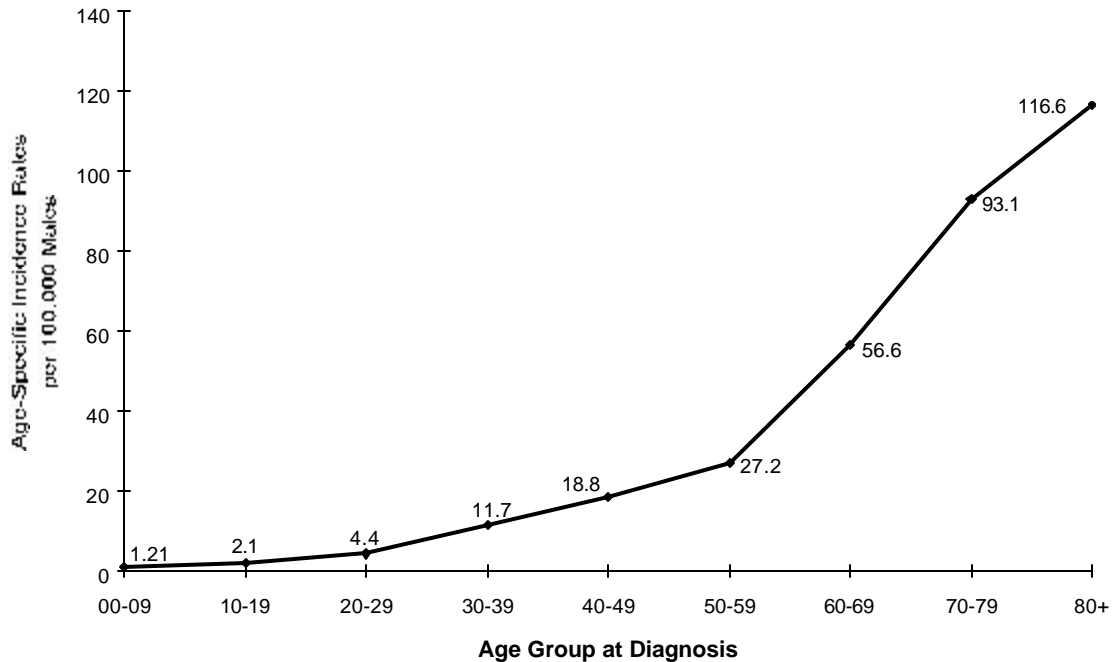


Non-Hodgkin's Lymphoma Age-Adjusted Incidence Rates (per 100,000 males):

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
MA	11.6	12.9	13.9	13.3	14.3	15.2	15.1	16.0	17.2	16.7	17.8	17.7	17.6	18.7	19.2
SEER	13.0	13.8	15.1	15.2	15.9	17.3	17.5	17.7	18.9	19.6	18.9	19.3	20.3	20.5	19.2

The incidence of non-Hodgkin's lymphoma increases steadily with age, reaching a peak of 117 cases per 100,000 in men aged 80 years and older in Massachusetts.

**Figure 16. Rate of Non-Hodgkin's Lymphoma by Age Group
Massachusetts Males, 1992-1996**



STAGING

Because of the staging complexities involved (including the reporting of cases in multiple staging systems), non-Hodgkin's lymphoma cases cannot readily be classified as "local", "regional" or "distant". Using this summary staging system results in a significant loss of information about the case. Because of this, stage at diagnosis data for non-Hodgkin's lymphoma will not be included in this report. (It should be noted that the SEER program also does not present summary stage information for non-Hodgkin's lymphoma.)

TREATMENT

Treatment options depend upon an individual's medical history and whether or not the lymphoma has spread within the lymph system or to other tissues. Most treatment plans include radiation therapy and/or chemotherapy.

SURVIVAL

Five-year relative survival rates for men with non-Hodgkin's lymphoma have been affected by the increasing number of these lymphomas that are associated with AIDS. Overall five-year survival rates peaked at 52.6% among men diagnosed between 1983 and 1985, and declined to 46.8% among men diagnosed between 1989 and 1995. Survival rates are substantially lower among black men, however, falling from 47.3% among men diagnosed between 1980 and 1982 to 37.6% among men diagnosed between 1989 and 1995.

Table 11 at a glance:

- White men have better survival rates than black men.
- Younger men have slightly better survival rates than older men, although differences are minimal.

Table 11. Non-Hodgkin's Lymphoma 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	46.8 %	47.7 %	37.6 %
By Age at Diagnosis:			
Under 65 years	47.8 %	49.1 %	37.0 %
65 years and over	45.2 %	45.5 %	39.6 % +

+ This number may not be accurate because of the small number of men in this category.

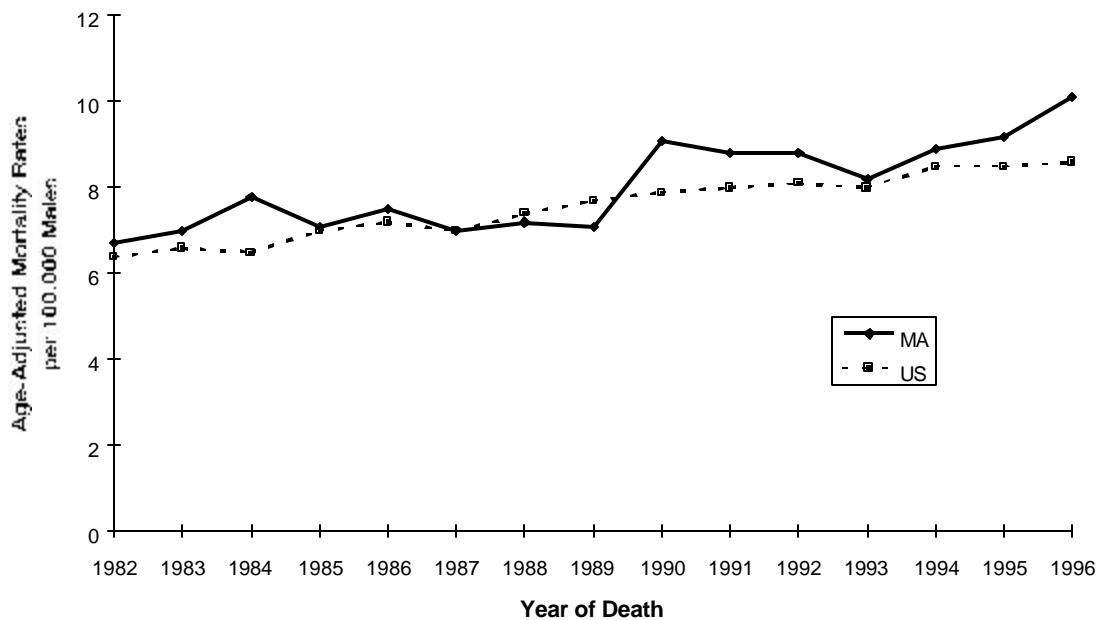
Note: SEER does not calculate survival rates for non-Hodgkin's lymphoma by stage at diagnosis.

MORTALITY

Non-Hodgkin's lymphoma is the fourth leading cause of cancer deaths in men in Massachusetts, accounting for 3.6% of cancer deaths between 1982 and 1996. During this period, 3,648 Massachusetts men died of non-Hodgkin's lymphoma. The mortality rate and number of deaths have increased each year during this period. In 1996, 327 men died, for an age-adjusted mortality rate of 10.1 per 100,000.

Non-Hodgkin's lymphoma death rates for Massachusetts men are higher than in men nationally. Since 1982, the age-adjusted mortality rate in Massachusetts men has increased 51%, from 6.7 per 100,000 in 1982 to 10.1 per 100,000 in 1996. SEER rates increased 34% between 1982 and 1996, from 6.4 per 100,000 to 8.6 per 100,000.

Figure 17. Male Non-Hodgkin's Lymphoma Mortality Trends for Massachusetts and United States, 1982-1996



Non-Hodgkin's Lymphoma Age-Adjusted Mortality Rates (per 100,000 males):

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
MA	6.7	7.0	7.8	7.1	7.5	7.0	7.2	7.1	9.1	8.8	8.8	8.2	8.9	9.2	10.1
US	6.4	6.6	6.5	7.0	7.2	7.0	7.4	7.7	7.9	8.0	8.1	8.0	8.5	8.5	8.6

ORAL AND PHARYNGEAL CANCER

Note: All information and data below refer to cancers of both the oral cavity (mouth) and the pharynx (throat).

RISK FACTORS

Oral Cancer Risk Factors:

- Tobacco use (including cigarettes, pipes, cigars, chewing tobacco and snuff)
- Heavy alcohol use
- Age (The incidence of oral and pharyngeal cancer in Massachusetts men begins to increase at ages 40-49, increases sharply through ages 60-69, then levels off. Highest incidence is in men ages 80 years and older.)
- Poor nutrition, especially chronic iron deficiency

Possible Risk Factors:

- Chronic irritation of the mouth due to ill-fitting dentures or broken teeth
- Poor oral hygiene

PREVENTION

To Reduce the Risk of Oral Cancer:

- Don't use tobacco, including cigarettes, cigars, pipes, chewing tobacco and snuff.
- Avoid excessive alcohol consumption.
- Maintain good oral hygiene.

SCREENING

Screening for Oral Cancer:

- Oral examination (including examination of the lips, tongue, inside lining of the cheeks, the floor of the mouth, gums and the hard palate) annually, beginning at least by age 40. Oral examinations may be conducted by all primary care providers, including dentists, physicians, nurses and dental hygienists.

SYMPTOMS

Common Warning Signs of Oral Cancer Include:

- A mouth sore that fails to heal or that bleeds easily
- A white or red patch in the mouth that will not go away
- A lump, thickening or soreness in the mouth, throat or tongue
- Difficulty chewing or swallowing food

Less Common Warning Signs Include :

- Bad breath

DETECTION

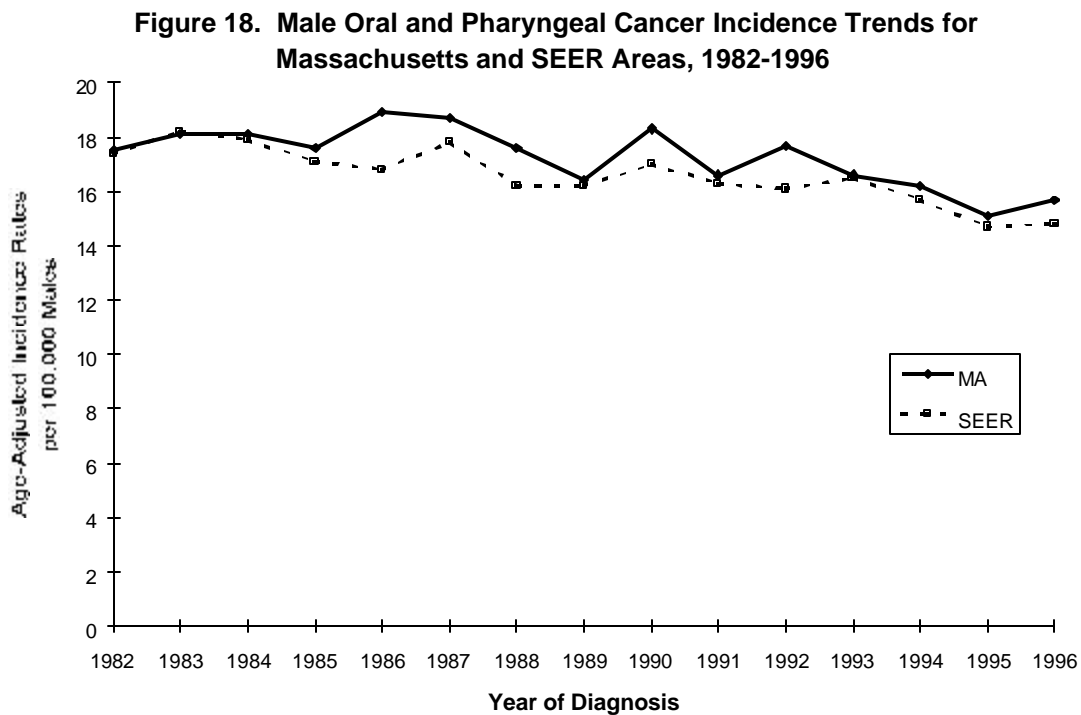
Because the oral cavity is easily accessible, oral cancer may be detected by *visualization* (looking) and *palpation* (feeling) during an oral examination. A *biopsy* of suspicious lesions or swellings (taking a sample of tissue and examining it under a microscope) may confirm the presence of premalignant or cancerous cells.

INCIDENCE

Based on national data, the average man has approximately a 1.5% lifetime risk of developing invasive oral cancer, or about a one in 68 chance. These risks are comparable for white and black men. While incidence has declined in recent years in white men, it has increased somewhat in black men. As with lung cancer, it's important to note that these are *average* risks, based on data from both smokers and non-smokers. A smoker will have a much higher likelihood of developing oral cancer, and a non-smoker will have a lower risk.

In Massachusetts, 7,592 new cases of oral cancer were reported in men between 1982 and 1996. Oral cancer was the fifth most common type of cancer in males during this period, accounting for 3.8% of all newly diagnosed cancers. In 1996, 486 men in the state were diagnosed with oral cancer, for an age-adjusted incidence rate of 15.7 cases per 100,000 men.

Overall, the age-adjusted incidence rate of oral cancer in Massachusetts men has decreased slightly over time, from 17.5 per 100,000 in 1982 to 15.7 per 100,000 in 1996 -- a decrease of 10%. (Rates have been irregular during this time, however, peaking at 18.9 cases per 100,000 in 1986.) This decrease was lower in Massachusetts than in the country as a whole (15% between 1982 and 1996, from 17.4 per 100,000 to 14.8 per 100,000). The incidence of oral and pharyngeal cancer in Massachusetts men is generally higher than in SEER areas.

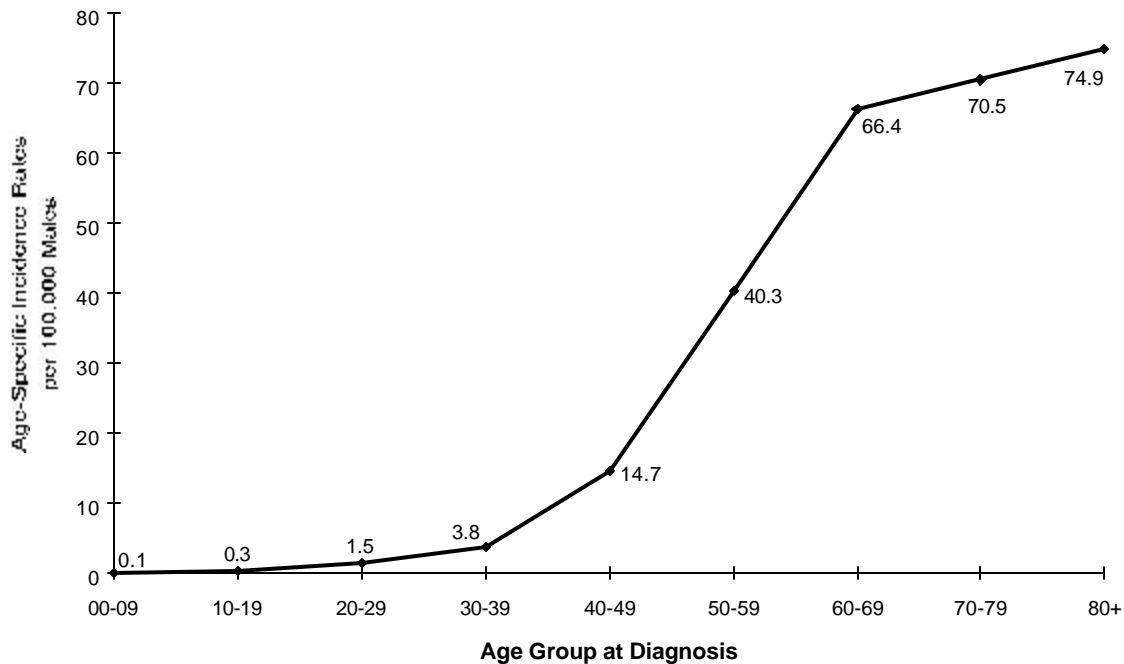


Oral Cancer Age-Adjusted Incidence Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	17.5	18.1	18.1	17.6	18.9	18.7	17.6	16.4	18.3	16.6	17.7	16.6	16.2	15.1	15.7
SEER	17.4	18.2	17.9	17.1	16.8	17.8	16.2	16.2	17.0	16.3	16.1	16.5	15.7	14.7	14.8

The incidence of oral cancer increases with age, peaking at about 75 cases per 100,000 in men aged 80 years and older in Massachusetts.

**Figure 19. Rate of Oral and Pharyngeal Cancer by Age Group
Massachusetts Males, 1992-1996**



STAGING

Fewer than 40% of all oral cancers are detected at an early stage, when treatment is most effective. This proportion has decreased over time, while the proportion of cases detected at a later stage has correspondingly increased. In 1985, 48% of oral cancers were detected after the cancer had spread, either to nearby areas or into other parts of the body. By 1995, this proportion had increased to 57%.

**Table 12. Oral and Pharyngeal Cancer Stage at Diagnosis
Massachusetts Males, 1985, 1990 and 1995**

Stage at Diagnosis:	1985	1990	1995
Localized (in one spot)	45.2 %	42.6 %	36.4 %
Regional (spread to some nearby areas)	38.6 %	43.2 %	51.1 %
Distant (spread into other parts of the body)	9.4 %	7.1 %	5.7 %
Unseated (a stage cannot be assigned)	6.8 %	7.1 %	6.8 %

TREATMENT

When detected and treated early, oral cancer is highly curable. Oral cancer may be treated with surgery, radiation therapy, or a combination of these.

SURVIVAL

Five-year relative survival rates for men with oral cancer have decreased slightly in the past 20 years, from 52% of men diagnosed between 1974 and 1976 to about 50% for men diagnosed between 1989 and 1995. Among black men, however, survival has fallen from 31% to 28% during this period. White men have higher survival rates than black men for all stages and age categories. Older men have slightly better survival rates than younger men, overall and for white males. Younger black males have a higher survival rate than older black men, however. Survival rates are lower for those men diagnosed at a later stage, regardless of race.

Table 13 at a glance:

- Survival rates are poorer for men diagnosed at later stages.
- White men have better survival rates than black men.
- Older men have slightly better survival rates than younger men, except among black men.

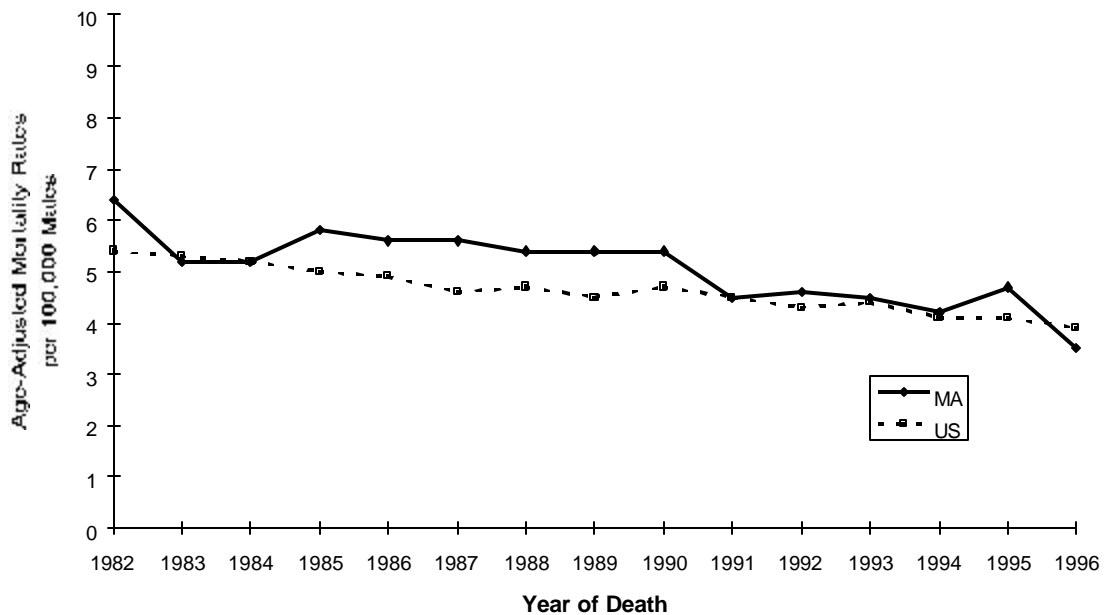
Table 13. Oral and Pharyngeal Cancer 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	50.0 %	52.7 %	28.4 %
By Stage at Diagnosis:			
Localized (in one spot)	79.3 %	80.1 %	63.4 %
Regional (spread to some nearby areas)	41.1 %	42.7 %	26.2 %
Distant (spread into other parts of the body)	20.4 %	21.9 %	11.9 %
By Age at Diagnosis:			
Under 65 years	49.6 %	52.7 %	28.9 %
65 years and over	51.3 %	53.3 %	26.4 %

MORTALITY

Oral cancer is the sixth leading cause of cancer deaths in men in Massachusetts, accounting for 2.2% of cancer deaths between 1982 and 1996. During this period, 2,219 Massachusetts men died of oral cancer. In 1996, 107 men died, for an age-adjusted mortality rate of 3.5 per 100,000.

Oral cancer death rates for Massachusetts men are higher than in men nationally, but this gap has narrowed over time. Since 1982, the age-adjusted mortality rate in Massachusetts men has decreased 45%, from 6.4 per 100,000 in 1982 to 3.5 per 100,000 in 1996. US rates decreased 28% between 1982 and 1996, from 5.4 per 100,000 to 3.9 per 100,000.

Figure 20. Male Oral and Pharyngeal Cancer Mortality Trends for Massachusetts and United States, 1982-1996



Oral Cancer Age-Adjusted Mortality Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	6.4	5.2	5.2	5.8	5.6	5.6	5.4	5.4	5.4	4.5	4.6	4.5	4.2	4.7	3.5
US	5.4	5.3	5.2	5.0	4.9	4.6	4.7	4.5	4.7	4.5	4.3	4.4	4.1	4.1	3.9

PROSTATE CANCER

RISK FACTORS

Prostate Cancer Risk Factors:

- Age (In Massachusetts men, the incidence of prostate cancer begins to increase at ages 50-59, and increases sharply thereafter, reaching highest incidence in ages 70-79.)
- Family history of prostate cancer
- Hormonal factors
- Black race

Possible Risk Factors:

- Alcohol consumption
- History of benign prostate disease
- Smoking
- Physical inactivity
- A diet high in fat

PREVENTION

To Reduce the Risk of Prostate Cancer:

- Eat a low-fat diet, including at least 5 servings of fruits and vegetables a day (especially cooked tomatoes).
- Avoid excessive alcohol use.
- Don't smoke.
- Increase your physical activity.

SCREENING

Screening for Prostate Cancer:

- A *digital rectal exam* (an exam in which a health care provider examines the rectum to feel for any abnormalities in the prostate) should be performed every year for men age 50 and older at average risk for prostate cancer. Black men and men with a family history of prostate cancer are at high risk, and should consider beginning this test by the age of 40.
- A *prostate-specific antigen (PSA) test* is a blood test that detects the level of prostate-specific antigen (PSA) in the blood. High levels of PSA may be a sign of prostate cancer. Like the digital rectal exam, men age 50 and older who are at average risk for prostate cancer should have this test done annually. Black men and men with a family history of prostate cancer are at high risk, and should begin screening at age 40.

SYMPTOMS

Common Warning Signs of Prostate Cancer Include:

Prostate cancer is usually associated with no symptoms, but possible symptoms include:

- Frequent urination, especially at night
- Difficulty urinating
- Pain or burning sensation when urinating
- Pain or stiffness in the lower back, hips or thighs
- Pain during sex
- Acute onset of impotence

Less Common Warning Signs Include:

- Blood in the urine
- Loss of appetite
- Unexplained anemia

DETECTION

Transrectal ultrasonography (TRUS) is done by inserting a probe in the rectum, and uses sound waves to visualize and evaluate any abnormalities. A *biopsy* of the prostate (removing a piece of abnormal tissue) is often performed during the procedure. It is necessary to examine the tissue under a microscope to confirm the presence of cancer.

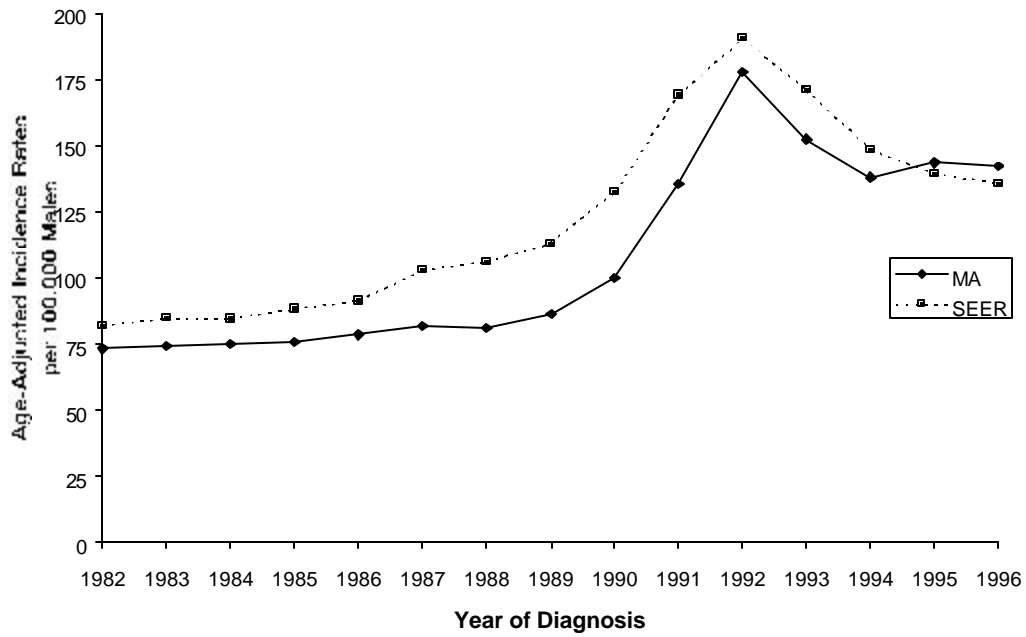
INCIDENCE

Based on national data, the average man has about a 16% lifetime risk of developing invasive prostate cancer, or about a one in 6 chance.

In Massachusetts, 48,565 new cases of prostate cancer were reported between 1982 and 1996. The number of cases doubled from about 2,000 per year to over 4,000 per year during this time. Prostate cancer was the most common type of cancer in males during this period, accounting for 24.3% of all newly diagnosed cancers. In 1996, 4,376 men in the state were diagnosed with prostate cancer, for an age-adjusted incidence rate of 142.5 per 100,000.

The age-adjusted incidence rate of prostate cancer in Massachusetts men has increased sharply over time, from 73.3 per 100,000 in 1982 to a high of 177.7 per 100,000 in 1992 -- an increase of 142%. The same pattern was seen in SEER data. This sharp increase is attributed primarily to increased screening, particularly the use of the PSA test. Since 1992, incidence rates have declined both in Massachusetts and nationally. In general, the incidence of prostate cancer has been lower in Massachusetts than in SEER areas, although state incidence was slightly higher in 1995 and 1996.

**Figure 21. Prostate Cancer Incidence Trends for
Massachusetts and SEER Areas, 1982-1996**

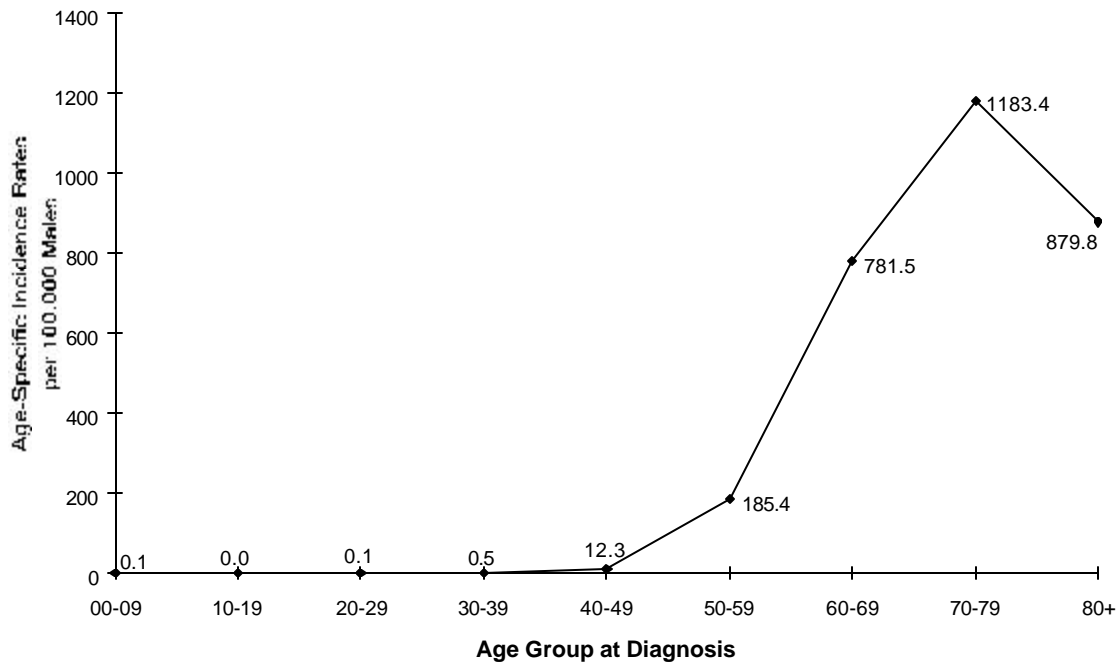


Prostate Cancer Age-Adjusted Incidence Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	73.3	74.5	75.3	76.0	78.6	82.0	81.4	86.4	100.0	135.5	177.7	152.6	138.2	143.5	142.5
SEER	82.2	84.8	84.6	88.3	91.4	103.0	106.2	113.0	132.5	169.2	190.8	171.1	148.4	139.3	135.7

The incidence of prostate cancer increases with age, reaching a peak of nearly 1200 cases per 100,000 men aged 70-79 years. It then declines slightly in men aged 80 years and older.

**Figure 22. Rate of Prostate Cancer by Age Group
Massachusetts Males, 1990-1995**



STAGING

Prostate cancer is one cancer in which the increase in early detection is notable. Between 1985 and 1995, the percentage of cases diagnosed at an early stage increased from 58% to over 75%, and the percentage diagnosed at a late stage decreased from 19.8% in 1985 to only 5.1% in 1995. These changes are largely the result of increased screening for prostate cancer during this time period.

**Table 14. Prostate Cancer Stage at Diagnosis
Massachusetts Males, 1985, 1990 and 1995**

Stage at Diagnosis:	1985	1990	1995
Localized (in one spot)	58.5 %	62.2 %	75.7 %
Regional (spread to some nearby areas)	9.5 %	11.4 %	12.4 %
Distant (spread into other parts of the body)	19.8 %	14.8 %	5.1 %
Unstaged (a stage cannot be assigned)	12.2 %	11.6 %	6.8 %

TREATMENT

There are several treatment options for men diagnosed with prostate cancer. The choice of treatment depends largely on the patient's preference, general health and life expectancy, and the stage at which the cancer is diagnosed.

- *Surgery* -- Men who are in generally good health with a life expectancy of at least 10 years, and whose cancer has not spread beyond the prostate gland, may be candidates for a *radical prostatectomy*. In this procedure, the entire prostate gland is surgically removed. Side effects of this surgery can include impotence and urinary incontinence.
- *Radiation* -- Radiation therapy is used to destroy cancerous cells. It may take the form of an external beam directed at the prostate or a small radioactive "seed" that is planted in the prostate (*brachytherapy*). Side effects can include impotence and rectal injury. Radiation may be used in addition to surgery, or in addition to hormonal therapy in patients with advanced disease in order to control local spread.
- *Hormone Therapy* -- Hormone therapy may be used either as an adjunctive treatment prior to radiation, or alone as a treatment for advanced stages of prostate cancer.
- *"Watchful Waiting"* -- Close monitoring may be recommended for some men whose cancer is confined to the prostate gland, and whose life expectancy following diagnosis is less than ten years. Periodic digital rectal exams and PSA tests may be the most appropriate course of action.

SURVIVAL

Five-year relative survival rates for men with prostate cancer have increased approximately 25% since 1980, to about 92%, with similar increases occurring in both white and black men. White men continue to have higher survival rates than black men for all stages and age categories, however. While survival rates do not differ greatly between men who are younger than age 65 and those who are age 65 and older, survival rates are slightly better for black males under age 65 than those who are age 65 and older.

Note: SEER combines cases diagnosed at local or regional stages in analyzing relative survival rates by stage for prostate cancer.

Table 15 at a glance:

- Survival rates are poorer for men whose cancer is diagnosed at a distant stage.
- White men have better survival rates than black men.
- Among black males, younger men have slightly better survival rates than older men. Overall, and for white males, survival rates are comparable for younger and older men.

Table 15. Prostate Cancer 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	91.9 %	93.1 %	83.6 %
By Stage at Diagnosis:			
Localized (in one spot)/Regional (spread to some nearby areas)	99.6 %	100.0 %	94.9 %
Distant (spread into other parts of the body)	32.3 %	31.9 %	29.5 %
By Age at Diagnosis:			
Under 65 years	92.7 %	93.8 %	86.1 %
65 years and over	92.3 %	93.5 %	83.4 %

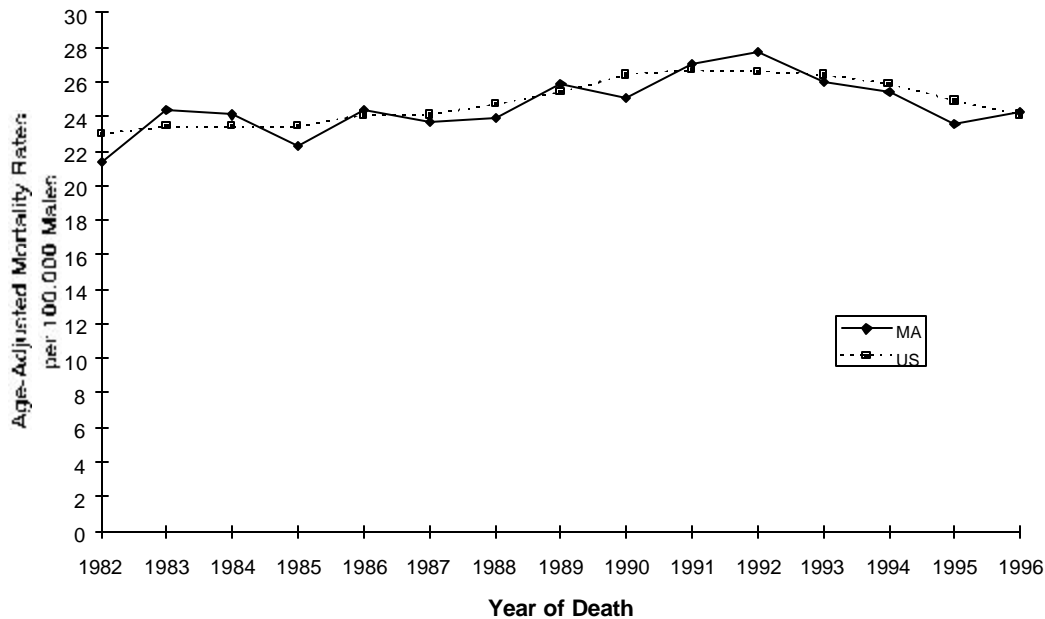
MORTALITY

Prostate cancer was the third leading cause of cancer deaths in men in Massachusetts between 1982 and 1996, accounting for 11.1% of cancer deaths during this time. (In 1996, prostate cancer became the second leading cause of cancer deaths, surpassing colorectal cancer.) Between 1982 and 1996, 11,216 Massachusetts men died of prostate cancer. In 1996, 821 men died, for an age-adjusted mortality rate of 24.3 per 100,000 men.

Since 1982, the age-adjusted mortality rate in Massachusetts men has increased from 21.4 per 100,000 in 1982 to a peak of 27.7 per 100,000 in 1992 (a 29% increase). Since then, rates have declined slightly, to 24.3 per 100,000 in 1996 (a 14% decrease since 1992). SEER rates followed a similar pattern during this period, increasing from 23.0 per 100,000 in 1982 to a high of 26.7 per 100,000 in 1991, followed by a slight decrease to 24.1 per 100,000 in 1995.

Despite the increase in incidence rates, mortality rates for prostate cancer have remained constant. The NCI notes that this is likely due to the fact that a lot of these cancers are being detected early, prior to their becoming life-threatening. The increased use of screening is resulting in a large proportion of prostate cancers being diagnosed at an early stage, when they are most treatable.

Figure 23. Prostate Cancer Mortality Trends for Massachusetts and United States, 1982-1996



Prostate Cancer Age-Adjusted Mortality Rates (per 100,000 males):

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
MA	21.4	24.4	24.1	22.3	24.4	23.7	23.9	25.9	25.1	27.0	27.7	26.0	25.4	23.6	24.3
US	23.0	23.4	23.4	23.4	24.1	24.1	24.7	25.4	26.4	26.7	26.6	26.4	25.9	24.9	24.1

TESTICULAR CANCER

RISK FACTORS

Testicular Cancer Risk Factors:

- Ages 15 through 40 (The incidence of testicular cancer in Massachusetts increases sharply in men ages 20-29 and reaches a peak in men ages 30-39, declining thereafter.)
- Undescended testicle

Possible Risk Factors:

- Inguinal hernia
- Testicular trauma
- Familial factors
- Occupations related to leather processing

PREVENTION

There are no known ways to reduce the risk of testicular cancer, so screening and early detection are particularly important.

SCREENING

Screening for Testicular Cancer:

- Males should perform testicular self-examination monthly, beginning at age 15.

SYMPTOMS

Common Warning Signs of Testicular Cancer Include:

- Change in consistency from one testis to the other
- A slight enlargement of the testicle
- Tenderness of the testicle
- A dull ache in the lower abdomen and groin, with a sensation of dragging and heaviness
- A lump or mass in the scrotum which is usually not painful
- Back pain
- Gynecomastia (enlargement of the breasts)

Note: Pain is usually absent.

DETECTION

Testicular Cancer Detection May Include:

- Physical examination
- Ultrasound
- Presence of tumor markers (AFP -- alpha feto-protein and HCG -- human chorionadotrophin) in the blood
- Inguinal orchiectomy (surgical removal of the testicle)

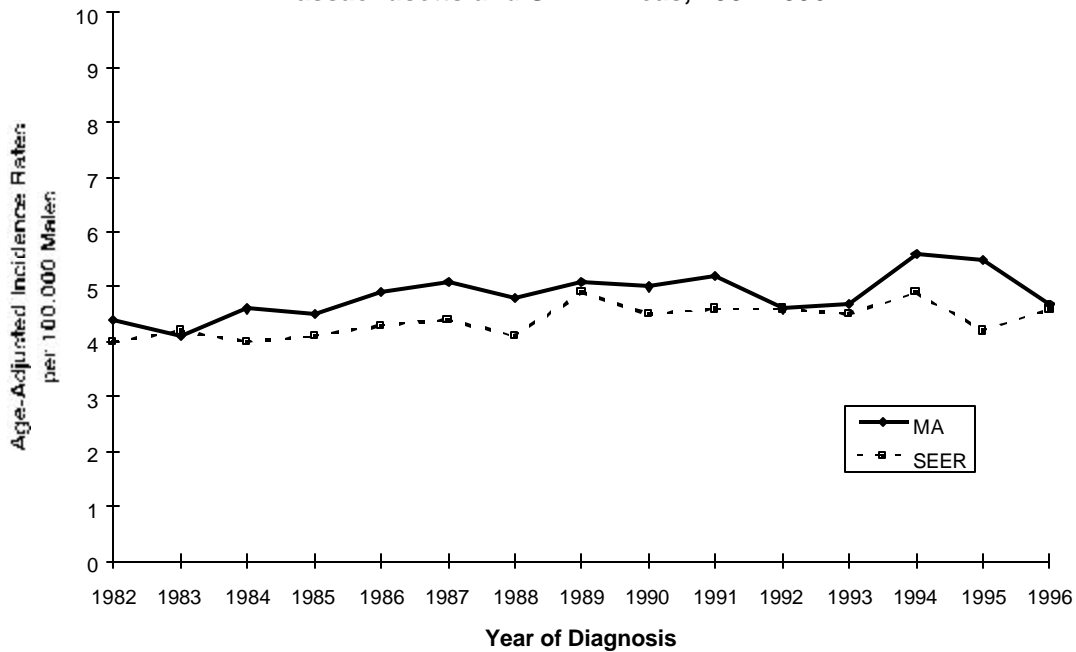
INCIDENCE

Based on national data, the average man has approximately a 0.3% lifetime risk of developing invasive testicular cancer, or about a one in 286 chance. The risk of testicular cancer is higher in white males than in black males.

In Massachusetts, 2,586 new cases of testicular cancer were reported in men between 1982 and 1996. During this period, testicular cancer accounted for 1.3% of all newly diagnosed cancers in males. In 1996, 170 men in the state were diagnosed with testicular cancer, for an age-adjusted incidence rate of 4.7 cases per 100,000 men.

The age-adjusted incidence rate of testicular cancer in Massachusetts men has increased over time, from 4.4 per 100,000 in 1982 to a high of 5.6 per 100,000 in 1994 -- an increase of 27%. During this period the incidence of testicular cancer has varied, however, due to the small number of cases diagnosed annually. The same pattern was seen nationally.

Figure 24. Testicular Cancer Incidence Trends for Massachusetts and SEER Areas, 1982-1996

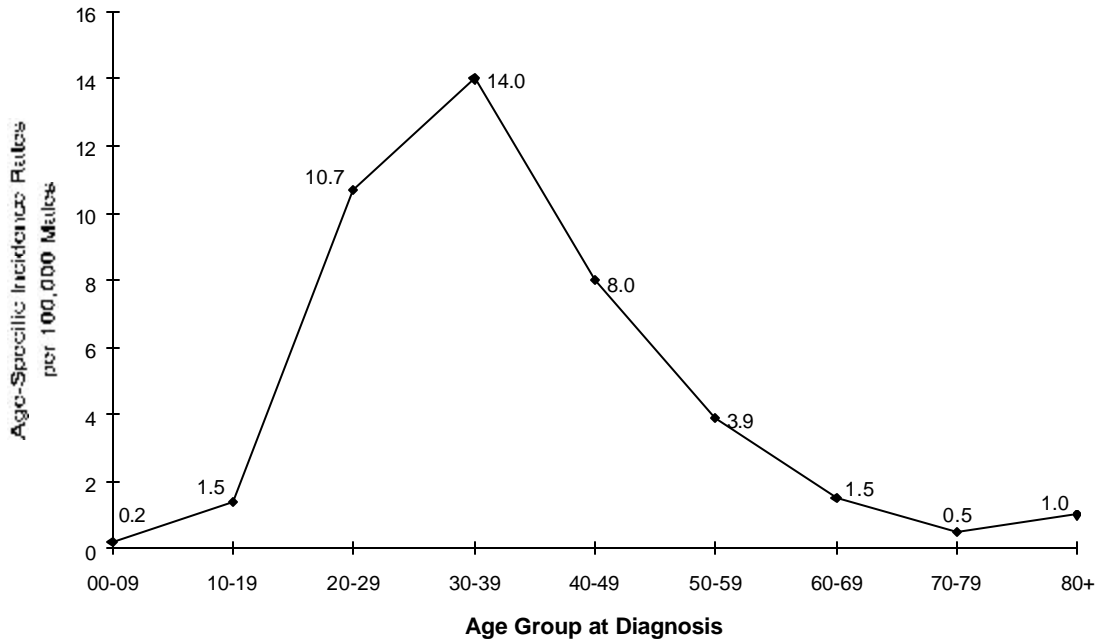


Testicular Cancer Age-Adjusted Incidence Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	4.4	4.1	4.6	4.5	4.9	5.1	4.8	5.1	5.0	5.3	4.6	4.7	5.6	5.5	4.7
SEER	4.0	4.2	4.0	4.1	4.3	4.4	4.1	4.9	4.5	4.6	4.6	4.5	4.9	4.2	4.6

The incidence of testicular cancer peaks in men in their twenties and thirties, with an incidence rate of 14 cases per 100,000 in men aged 30-39 years, then decreases with age.

**Figure 22. Rate of Testicular Cancer by Age Group
Massachusetts Males, 1992-1996**



STAGING

The proportion of testicular cancers diagnosed at an early stage, when treatment is most effective, has increased steadily over time, from 52.3% in 1985 to 70.3% in 1995. During this time period, the proportion of cancer diagnosed at a regional or late stage has declined correspondingly.

Table 16. Testicular Cancer Stage at Diagnosis Massachusetts Males, 1985, 1990 and 1995			
Stage at Diagnosis:	1985	1990	1995
Localized (in one spot)	52.3 %	65.4 %	70.3 %
Regional (spread to some nearby areas)	23.2 %	21.1 %	14.9 %
Distant (spread into other parts of the body)	15.9 %	9.7 %	9.7 %
Unstaged (a stage cannot be assigned)	8.6 %	3.8 %	5.1 %

TREATMENT

Surgery is necessary in all cases of testicular cancer. This may be followed by radiation and/or chemotherapy.

SURVIVAL

Testicular cancer has one of the highest relative survival rates of any cancer. Currently, more than 95% of men diagnosed with testicular cancer are alive five years later. Nearly 75% of men who are diagnosed with testicular cancer at a distant stage survive their disease for at least five years.

Table 17 at a glance:

- Survival rates are poorer for men diagnosed at a distant stage than for men diagnosed at a localized or regional stage.
- White men seem to have better survival rates than black men. (The number of black men who are diagnosed with testicular cancer is so small that their survival rates may not be accurate, however.)
- Younger men have better survival rates than older men.

Table 17. Testicular Cancer 5-Year Relative Survival Rates Males, United States, 1989-1995			
	Race:		
	All Races	White	Black
Overall:	95.4 %	95.7 %	88.1 %
By Stage at Diagnosis:			
Localized (in one spot)	98.7 %	98.7 %	95.5 %
Regional (spread to some nearby areas)	96.9 %	97.2 %	--
Distant (spread into other parts of the body)	74.4 %	75.6 %	--
By Age at Diagnosis:			
Under 65 years	95.5 %	95.7 %	88.1 %
65 years and over	85.9 % +	88.2 % +	--

-- Survival rate could not be calculated because of small numbers.

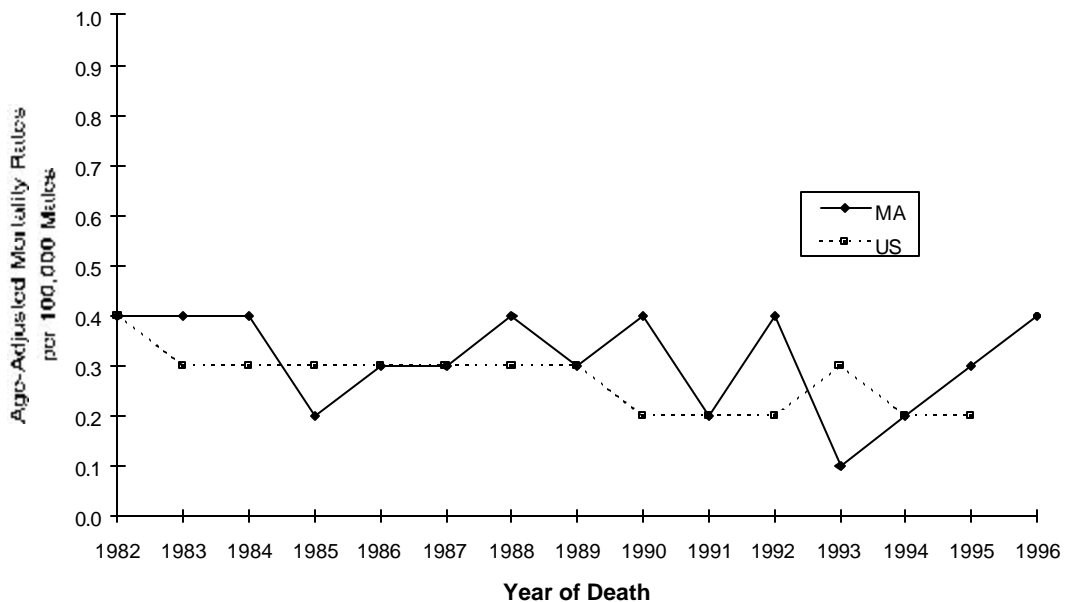
+ These numbers may not be accurate because of the small number of men in these categories.

MORTALITY

Testicular cancer accounted for 0.2% of cancer deaths between 1982 and 1996. During this period, 163 Massachusetts men died of testicular cancer. In 1996, 15 men died, for an age-adjusted mortality rate of 0.4 per 100,000.

Since 1982, the age-adjusted mortality rate in Massachusetts men has fluctuated between 0.1 and 0.4 deaths per 100,000. It is difficult to interpret if there is a trend because of small numbers and low rates. National rates have shown a general downward trend, from 0.4 deaths per 100,000 in 1982 to 0.2 per 100,000 in 1995.

Figure 26. Testicular Cancer Mortality Trends for Massachusetts and United States, 1982-1996



Testicular Cancer Age-Adjusted Mortality Rates (per 100,000 males):

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>
MA	0.4	0.4	0.4	0.2	0.3	0.3	0.4	0.3	0.4	0.2	0.4	0.1	0.2	0.3	0.4
US	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.2	0.2

RESOURCES

Cancer Information Hotlines and Organizations:

American Cancer Society

(includes information on local free and low-cost cancer screenings)

1-800-ACS-2345

Cancer Information Service (National Cancer Institute)

1-800-4-CANCER (1-800-422-6237)

1-800-332-8615 for the hearing impaired

Smoker's Quitline, Massachusetts Tobacco Control Program and the
American Cancer Society

1-800-TRY-TO-STOP (1-800-879-8678) in English

1-800-8-DEJALO (1-800-833-5256) in Spanish

1-800-TDD-1477 (1-800-833-1477) for the hearing impaired

Us Too *(prostate cancer)*

1-800-80-US-TOO (1-800-808-7866)

Cancer Care Counseling Line

1-800-813-HOPE

Internet Websites:

The following is a list of selected Internet websites that provide information on cancer. Many of these sites also provide *links* to other sites (not listed) which may be of interest.

Massachusetts Department of Public Health

<http://www.state.ma.us/dph>

American Cancer Society

<http://www.cancer.org>

National Cancer Institute

Public information: **<http://rex.nci.nih.gov>**

CancerNet: **<http://cancernet.nci.nih.gov>**

SEER data: **<http://www-seer.ims.nci.nih.gov>**

5-A-Day Program (nutrition):

<http://dccps.nci.nih.gov/5aday/>

Centers for Disease Control and Prevention

Home page: **<http://www.cdc.gov>**

Cancer Prevention and Control Program:

<http://www.cdc.gov/cancer>

Harvard Center for Cancer Prevention

<http://www.hsph.harvard.edu/cancer>

Oncolink

<http://www.oncolink.upenn.edu>

Cancer Care

<http://www.cancercare.org>

Cancer News on the Net

<http://www.cancernews.com>

National Coalition for Cancer Survivorship

<http://www.cansearch.org>

Pamphlets and Booklets:

NUTRITION:

Diet and Health Recommendations for Cancer Prevention. 35-page booklet that includes a section on alcohol and cancer risk. (Available in English only). Free. To order, contact the American Institute for Cancer Research at (800) 843-8114.

- *Eat More Fruits and Vegetables* (also available in Spanish)
 - *Snack Your Way to 5 A Day*
 - *5 A Day -- The Microwave Way*
- US Department of Health and Human Services
To order any of these pamphlets, call 1-800-421-8871

PHYSICAL ACTIVITY:

A series of reproducible fact sheets from the American Council on Exercise (Available in English only). Free. To order, send requests via mail or fax to:

Massachusetts Health Promotion Clearinghouse
The Medical Foundation
95 Berkeley Street
Boston, MA 02116
Fax: (617) 536-8012

- *A Walk A Day*
- *Active Seniors Enjoy Life More*
- *Exercise Pyramid*
- *Making Time For Exercise is Easy*
- *Moderate Exercise Will Do You A Lot of Good*
- *Three Things Every Exercise Program Should Have*
- *The Right Exercise Program For You Starts Here*

PROSTATE CANCER:

What Every Man Should Know About Prostate Cancer, Massachusetts Department of Public Health. Full-color 7-page brochure with diagrams and photos. (Available in English, Chinese, Haitian Creole, Portuguese, Russian, and Spanish.) Free. To order, send requests via mail or fax to:

Massachusetts Health Promotion Clearinghouse
The Medical Foundation
95 Berkeley Street
Boston, MA 02116
Fax: (617) 536-8012

SKIN CANCER:

American Academy of Dermatology: (847) 330-0230

- *Skin Cancer: An Undeclared Epidemic*, 1994

American Cancer Society: (800) ACS-2345

- *Facts on Skin Cancer*, 1988
- *What You Should Know About Melanoma*, 1997

Massachusetts Department of Public Health: (617) 624-5448

- *Safe Sun Tips from SunSpot the Do-Right Dog* (tipsheet), 1997
- *Tips on Sun Protection for Infants* (tipsheet), 1997

Skin Cancer Foundation: (212) 725-5176

- *Sunproofing Your Baby*, 1992

US Environmental Protection Agency: (800) 296-1996

- *Ultraviolet Index: What You Need to Know*, 1995

TOBACCO:

The following tobacco education materials may be ordered from the Massachusetts Tobacco Education Clearinghouse (MTEC). For more information, contact MTEC at:

Massachusetts Tobacco Education Clearinghouse
JSI Research and Training Institute, Inc.
44 Farnsworth Street
Boston, Massachusetts 02122-1211
Telephone: (617) 482-9485
Fax: (617) 482-0617
E-mail: mtec@jsi.com
Internet: <http://www.quitnet.org/partners/mtec>

Pamphlets for Older Smokers:

- *Are You 50 or Over? Still Smoking? Thinking About Quitting?* (Available in English)
- *Check Your Smoking I.Q. An Important Quiz for Older Smokers* (Questionnaire - Available in English)
- *Como Dejaste De Fumar? [How Did You Quit?]* (Available in Spanish)
- *How Did You Quit?* (Available in English)
- *It's Time to Quit!* (Available in English)
- *You Can Stop Smoking* (Available in English)

Fact Sheets: As many single copies may be ordered from this list as needed for a single price of \$2.00.

- *African Americans and Tobacco* (Available in English)
- *American Indians and Alaska Natives and Tobacco* (Available in English)
- *Asian Americans and Pacific Islanders and Tobacco* (Available in English)
- *Children and Tobacco: The Facts* (Available in English)
- *Children and Tobacco: The Problem* (Available in English)
- *Deadly to Ignore...Oral Cancer* (Available in English)
- *Environmental Tobacco Smoke and Human Health* (Available in English)
- *Facts About Cigar Smoking* (Available in English)
- *Hispanics and Tobacco* (Available in English)
- *It's Time to Stop Being a Passive Victim* (Available in English)
- *Most Teens Don't Smoke* (Available in English)
- *No Sea Victima Pasiva Del Humo De Segunda Mano* (Available in Spanish)
- *Oral Cancer: Health Issue For the 1990's* (Available in English)
- *Smoking Cessation and The Benefits of Quitting* (Available in English)
- *Smoking: It's never too late to stop* (Available in English)
- *Spit Tobacco* (Available in English)
- *Teens and Tobacco: Facts Not Fiction* (Available in English)
- *Tobacco Facts, Figures and Myths* (Available in English)
- *Women Who Smoke* (Available in English)

Materials on Secondhand Smoke:

- *I Mind Very Much If You Smoke*, Booklet (Available in English)
- *Please Don't Smoke in My House*, Booklet (Available in Chinese, Cambodian, and Vietnamese)
- *Please Don't Smoke In Our Home*, Sign (Available in English)
- *Reducing the Health Risks of Secondhand Smoke*, Pamphlet (Available in English)
- *Second Hand Smoke: It's No Joke*, Booklet (Available in English and Spanish)
- *Secondhand Smoke: What You Can Do About Secondhand Smoke as Parents, Decision-makers, and Building Occupants* Pamphlet (Available in English)
- *Usted Puede Hacer Algo con Respecto al Humo Secundario* Booklet (Available in Spanish)
- *You Can Do Something About Secondhand Smoke* Booklet (Available in English, Portuguese, and Chinese)

Materials on Tobacco-Free Youth:

- *Beat the Smokeless Habit: Game Plan for Success*, Booklet (Available in English)
- *Chew or Snuff Is Real Bad Stuff*, Pamphlet (Available in English)
- *I Quit! What to Do When You're Sick of Smoking, Chewing, or Dipping*, Booklet (Available in English)
- *Quitting Spitting*, Booklet (Available in English)

- *Spitting Into the Wind: The Facts About Dip and Chew*, Booklet (Available in English)
- *The Dirt on Dip*, Video (Available in English)

Materials on Smoking and Smoking Cessation:

- *Can You Help the Smoker in Your Life Decide to Quit?* Pamphlet (Available in English and Spanish)
- *Datos Sobre el Habito de Fumar y Recomendaciones para Dejar de Fumar [Smoking: Facts and Quitting Tips for Hispanics]* Pamphlet (English/Spanish)
- *El Fumar Es Malo: Se Mire Como Se Mire [Smoking Is Bad: It's as Bad as It Looks]* Booklet (Available in Spanish)
- *Good Things Happen to Healthy Families*, Pamphlet (Available in Chinese, Vietnamese and Cambodian)
- *Healthy Beginnings Without Cigarettes or Secondhand Smoke*, Booklet (Available in English and Portuguese)
- *I Won't Smoke Today Because...*, Pamphlet (Available in English)
- *In Any Language, The Facts About Smoking Are Alarming*, Fact sheet/Poster (English/Chinese/Spanish/ Cambodian/ Haitian-Creole /Portuguese/Vietnamese)
- *It's Never Too Late to Quit; Top Ten Reasons to Quit Smoking*, Pamphlet (Available in English)
- *Life After Cigarettes*, Booklet (Available in English)
- *Massachusetts Smokers Quitline*, Pamphlet (Available in English/Spanish)
- *Pequeno Livro Posso Deixar De Fumar [The Little I Can Quit Book]* Booklet/Cessation guide (Available in Portuguese)
- *Our Family Is Healthy Because Our Home Is Free From Cigarette Smoke*, Poster (Available in Cambodian)
- *Out of the Ashes: Choosing a Method to Quit Smoking*, Booklet (Available in English)
- *Quit Smoking Cards - Life After Cigarettes* (Available in English and Spanish)
- *Rankont Bouki ak Malis [A Tale About Cigarettes]* Pamphlet (Available in Haitian Creole)
- *Rompa Con El Vicio*, Booklet (Available in Spanish)
- *Smart Move! A Stop Smoking Guide*, Booklet (Available in English)
- *Smoking Is Bad: No Ifs, Ands or Butts*, Booklet (Available in English)
- *Smoking: Facts and Quitting Tips for Black Americans*, Pamphlet (Available in English)
- *Smoking: Facts and Tips for Quitting*, Booklet (Available in English)
- *Still Smoking? Read This!* Booklet (Available in English and Spanish)
- *The Smoking Trap!* Photonovella (Available in English)
- *Thuoc La Va Gia Dinh [Tobacco and the Family]* Pamphlet (Available in Vietnamese)
- *Vamos A Hablar Acerca Del Fumar [Let's Talk About Smoking]* Booklet/Guide (Available in Spanish)
- *Vamos Falar Sobre O Fumo [Let's Talk About Smoking]* Booklet/Guide (Available in Portuguese)
- *What Do All Of These Have In Common?* Pamphlet/Guide (Available in English)

SUGGESTED READINGS AND REFERENCES

The ABCs of Prostate Cancer: The Book That Could Save Your Life, Joseph E. Oesterling, MD, and Mark A. Moyad, MPH; Madison Books, Lanham, New York, Oxford, 1997

The American Cancer Society Cancer Book, Arthur I. Holleb, MD, editor; Doubleday & Company, Inc., Garden City, NY, 1986

(American Cancer Society) Prostate Cancer: What Every Man -- and His Family -- Needs to Know, David G. Bostwick, MD, Gregory T. MacLennan, MD, and Thayne R. Larson, MD; Villard, New York, NY, 1996

The American Cancer Society Source Book for Nurses (7th edition); Jones & Bartlett Publishers, Sudbury, MA, 1996

Beyond Miracles: Living with Cancer, Stephen P. Hersh, MD; Contemporary Books, Lincolnwood, IL, 1998

Cancer Answers: Encouraging Answers to 25 Questions You Were Always Afraid to Ask, Errol C. Friedberg, MD; WH Freeman and Company, New York, NY, 1992

The Cancer Dictionary, Roberta Altman and Michael J. Sarg, MD; Facts on File Inc., New York, NY, 1992

Cancer: Increasing Your Odds for Survival, David Bognar; Hunter House Publishers, Alameda, CA, 1998

Cancer Combat: Cancer Survivors Share Their Guerrilla Tactics to Help You Win the Fight of Your Life, Dean King, Jessica King, Jonathan Pearlroth; Bantam Books, 1998

Cancer Free: The Comprehensive Cancer Prevention Program, Sidney J. Winawer, MD, Moshe Shike, MD; Simon and Schuster, New York, NY, 1995

Cancer Incidence and Mortality in Massachusetts 1992-1996, Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health; Boston, MA, 1999

Cancer Incidence and Mortality in Massachusetts 1990-1995: City/Town Supplement, Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Public Health; Boston, MA, 1999

Cancer Manual (9th edition), American Cancer Society, Massachusetts Division, Inc.; 1996

The Chemotherapy and Radiation Therapy Survival Guide, Judith McKay, RN, OCN, Nancee Hirano, RN, MS, AOCN; New Harbinger Publications, Inc., Oakland, CA, 1998

Choices (2nd edition), Marion Morra, Eva Potts; Avon Books, New York, NY, 1994

Colorectal Cancer Screening: Clinical Guidelines and Rationale (Executive Summary), American Gastroenterological Association, Bethesda, MD, February 1997

Colon Cancer & the Polyps Connection, Stephen Fisher; Fisher Books, Tucson, AZ, 1995

Confronting Cancer: How to Care for Today and Tomorrow, Michael M. Sherry, MD; Insight Books, Plenum Press, New York and London, 1994

Diagnosis and Treatment of Early Melanoma (consensus statement), National Institutes of Health Consensus Development Conference, January 27-29, 1992

Everyone's Guide to Cancer Therapy: How Cancer is Diagnosed, Treated and Managed Day to Day, Malin Dollinger, MD, Ernest H. Rosenbaum, MD, Greg Cable; Somerville House Books Limited, Toronto, Ontario, Canada, and Andrew McMeel Publishing, Kansas City, MO, 1997

Food, Nutrition and the Prevention of Cancer: A Global Perspective, World Cancer Research Fund / American Institute for Cancer Research; Washington, DC, 1997

Harvard Report on Cancer Prevention, Volume I: Causes of Human Cancer, Cancer Causes and Control; Rapid Science Publishers, London and Philadelphia, Volume 7, Supplement 1, November 1996

Harvard Report on Cancer Prevention, Volume II: Prevention of Human Cancer, Cancer Causes and Control; Rapid Science Publishers, London and Philadelphia, Volume 8, Supplement 1, November 1997

I Can Cope: Staying Healthy with Cancer, Judi Johnson and Linda Klein; CHRONMED Publishing, Minneapolis, MN, 1994

Informed Decisions: The Complete Book of Cancer Diagnosis, Treatment and Recovery, Gerald P. Murphy, MD, Lois B. Morris and Dianne Lange; Viking, 1997

Nutrition and Cancer Special Report, Cancer Causes and Control; Rapid Science Publishers, London and Philadelphia, Volume 7, Number 1, January 1996

Nutrition, Cancer and You: What You Need to Know and Where to Start, Susan Calhoun and Jane Bradley; Addax Publishing Group, Lenexa, KS, 1997

The Patient's Guide to Prostate Cancer: An Expert's Successful Treatment Strategies and Options, Marc B. Garnick, MD; Plume Book, 1996

Prostate and Cancer: A Family Guide to Diagnosis, Treatment and Survival, Sheldon Marks, MD; Fisher Books, Tucson, AZ, 1997

Prostate Cancer: A Guide for Women and the Men They Love, Barbara Rubin Wainrib, EdD, and Sandra Harber, PhD, with Jack Maguire; Dell Publishing, New York, NY, 1996

SEER Cancer Statistics Review, 1973-1996, LAG Ries, CL Kosary, BF Hankey, BA Miller, L Clegg, BK Edwards (eds.); National Cancer Institute, Bethesda, MD, 1999

Surviving Well: A Guide for Prostate Cancer Support Groups, Bureau of Family and Community Health, Massachusetts Department of Public Health; Boston, MA, 1998

The Wellness Community Guide to Fighting for Recovery from Cancer, Harold H. Benjamin, PhD and Susan M. Love, MD; GP Putnam's Sons, New York, NY, 1995

Understanding Cancer: A Patient's Guide to Diagnosis, Prognosis, and Treatment, C. Norman Coleman, MD; The Johns Hopkins University Press, Baltimore, MD, 1998

What To Do If You Get Colon Cancer, Paul Miskovitz, MD, Marian Betancourt; John Wiley and Sons, Inc., New York, NY, 1997

What You Need to Know About Cancer, Scientific American (special issue); W.H. Freeman and Company, New York, 1997

STATISTICAL DEFINITIONS

Here are some definitions that may help you understand and use the information in this report. Many of these terms apply to all sorts of diseases and health conditions, but we'll use prostate cancer as an example.

Incidence rate: the number of new cases of a disease in a given size population in a given time period (for example, the number of new cases of prostate cancer in a group of men in a given time period). Usually, an incidence rate is given as the number of new cases per 100,000 men per year.

For example: an annual prostate cancer incidence rate of 142 per 100,000 means that for every 100,000 men there were 142 new cases of prostate cancer diagnosed per year.

Mortality rate (death rate): the number of deaths from a disease in a given size population in a given time period. Like incidence rates, mortality rates are usually given as the number of deaths per 100,000 people per year.

For example: an annual prostate cancer mortality rate of 24 per 100,000 means that for every 100,000 men there were 24 deaths from prostate cancer per year.

Age-specific rates: These are incidence rates or mortality rates among people of a particular age range in a given time period. We can use age-specific rates to evaluate how cancer incidence may change with age. Age-specific rates are calculated by dividing the number of people in an age group who have a particular condition by the number of people in that same age group overall. The rate is generally given as a rate per 100,000.

For example: an age-specific prostate cancer rate for men aged 70-79 of 1,183 per 100,000 means that there were 1,183 cases of prostate cancer diagnosed in men aged 70-79 for every 100,000 men aged 70-79 in the population for a given time period (here, 1992 through 1996).

Age-adjusted rates: The risk of developing cancer often varies by age. For example, older men are more likely to develop prostate cancer than younger men. This makes a difference when we're comparing cancer cases or deaths between communities or states, between Massachusetts and the United States as a whole, or over time. Age-adjustment is a way to take into account the fact that different areas have different age structures -- some communities may have a lot of retirees, while others may be "college towns" with many students in their 20s. Without taking into account these different age structures, we can't be sure if a community has a higher number of prostate cancer cases because rates really are higher in that community because of factors other than age, or simply because there are more older men living there.

In this report, we don't compare cancer rates between different communities, but we do compare rates between Massachusetts and the national SEER program (the best estimate of US rates). It's important to use age-adjusted rates, so that we take into account differences between the age structure of Massachusetts and the US.

Age-adjusted rates are calculated by weighting the age-specific rates for a given year by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined. The 1970 US population is used as the standard in this document for consistency with data published by SEER.

For example: the Massachusetts 1996 age-adjusted male prostate cancer incidence rate was 142.5 per 100,000, which means that there were 142.5 cases of prostate cancer diagnosed for each 100,000 men in Massachusetts. The SEER 1996 age-adjusted prostate cancer incidence rate was 135.7 per 100,000, which means that there were 135.7 cases of prostate cancer diagnosed for each 100,000 men in the SEER areas. Because these are both age-adjusted rates, we can directly compare them and determine that the incidence of prostate cancer was slightly higher in Massachusetts than in the SEER areas in 1996.

Relative Survival Rate: this rate gives the likelihood that a patient will *not* die from his or her cancer (or a cause associated with the cancer) over a specified period (usually five years). It is calculated by comparing the *actual* survival rate for a group of patients to what we would *expect* for that group based on factors such as their age and sex. This takes into account the fact that people in this group may die of things other than their cancer during the follow-up period. Relative survival rates in this report are obtained from the SEER program, and refer to men diagnosed between 1989 and 1995.

For example: a 5-year prostate cancer survival rate of 92% means that 92% of men diagnosed with prostate cancer have not died from that cancer within five years of diagnosis.

Risk or Lifetime Risk: the likelihood that a man will develop cancer sometime in his life. This is a figure that is easy to misinterpret. For example, you may have heard that your risk of developing prostate cancer is 1 in 6. This makes your likelihood of developing prostate cancer sound much higher than it actually is. The "1 in 6" figure actually refers to the likelihood that a child born today has a 1 in 6 chance of being diagnosed with prostate cancer at some point during his life, based on current trends.

The risk of developing most cancers varies with age, and may also vary by race. The likelihood of developing cancer also varies with other risk factors a man may have, such as a family history of that cancer, medical history or lifestyle.

Note: risks may also be given as percentages. For example, a 1 in 6 risk is the same as a 17% risk -- 1 divided by 6.